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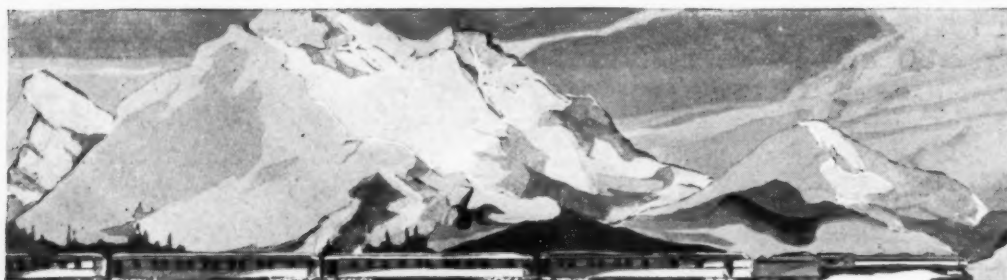
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AUGUST, 1930



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Diphtheria in Infants Under Six Months of Age

A New Clinical Challenge

GEORGE J. BRANCATO, M.D.
Brooklyn, N. Y.

If confronted with a case of rhinitis in an infant six days old with a normal or slight rise in temperature and little general disturbance, how many physicians would think of diphtheria as a possible diagnosis? The writer would venture to say that the number would be small. Such a case is on record, and the writer himself recently had a case in an infant seven weeks old, which gave an impetus to the writing of this paper.

CASE REPORT

J. D., a male infant, was a full-term baby, weighing nine pounds at birth. He was born of a mother who neither had nor gave a history of tuberculosis or lues (her Wassermann was negative). The child was seven weeks old when the writer was called to see him, because he had had a "cold" in the nose for three days and a bloody nasal discharge was now present. The child was well-nourished and did not appear to be very sick, although he had refused the breast that day. Temperature was 100° F., heart rate was somewhat accelerated, respirations slightly increased but there was no respiratory embarrassment. A muco-sanguineous discharge was present in the left nostril, while the tonsils and pharynx appeared normal. A culture of the nasal discharge was taken on suspicion, and a report of "positive for diphtheria" was received the next morning. 10,000 units of antitoxin were given intramuscularly at once, and a second culture was taken as a check-up. This was also positive.

The mother had been up and about, but a marked hyperemia of the left conjunctiva aroused suspicion.

Upon questioning she gave a history of having had a sore-throat for about a week. Her throat was examined and a small patch of membrane was present on one tonsil and the pharynx was congested. She was given 10,000 units of antitoxin intravenously and 20,000 units intramuscularly. Both mother and child made an uncomplicated recovery and cultures were negative within two weeks.

Let us now review the literature as to the incidence, location, symptoms, diagnosis, prognosis, and treatment of diphtheria in infancy.

INCIDENCE

P. de Elizalde in reporting a case of diphtheria eleven days old states that out of 2978 entries in his hospital over a period of nine years only six cases of diphtheria in infancy are recorded. He also found that only four cases had been published in the literature covering Uruguay and Argentina. Giusanni reports a case three months old. Spolverini reports a case thirty days old. Rorhler describes a case of a six-day-old infant who developed a diphtheritic conjunctivitis, rhinitis, and severe croupous involvement of the pharynx and esophagus. Baginsky reports an incidence of 0.15% in 2,700 infants under six months of age. Rolleston and Deacon found an incidence of 0.7% in 2,600 and 31,000 infants, respectively. According to these figures one would be led to believe that diphtheria in infants is rare, but on the contrary, Ribadeau-Dumas, Lacomme and Loiseau claim "that diphtheria in the new-born is uncommon only because it is often overlooked".

J. E. Russell took cultures on 48 healthy mater-

nity babies over a period of seven months. Seventeen cultures were positive and fourteen had symptoms of diphtheria. Ten cases occurred in the first two months of life, the rest before six months. S. F. Ravenel reports: "In 2,400 consecutive admissions for diphtheria on the contagious service of the Cincinnati General Hospital there were 49 infants under one year of age—an incidence of 2.04%." McCollum and Place give the incidence as 2.75%.

LOCATION

Diphtheria in infancy in the majority of cases appears to attack the nasal mucosa. Russell's 14 cases all had positive nasal cultures and a blood-streaked nasal discharge. S. F. Ravenel states: "Young infants are prone to nasal infection." All the cases mentioned under the heading of incidence had nasal involvement.

SYMPTOMS

Since we have seen that nasal diphtheria is the most common type of involvement in infants, it would be well to become acquainted with its symptomatology. Most authors seem to agree that the most constant symptom is a bloody nasal discharge. Nasal obstruction is usually unilateral (not pathognomonic), but may be bilateral. There may be small repeated hemorrhages from the nose, and erythema and erosion of the nares. There is no pharyngeal involvement in primary nasal cases but there is cervical adenopathy. The temperature is normal or slightly elevated. There are no pathognomonic symptoms, although a persistent nasal discharge, especially when bloody, should always make us suspect diphtheria and take cultures.

DIAGNOSIS

Unless one is aware of the fact that diphtheria not infrequently occurs in infants and that it should be suspected in every case of sanguineous rhinitis, diphtheria in infants is very likely to be overlooked. If every case of rhinitis be suspected as diphtheria and cultures taken routinely, the number of cases of nasal diphtheria not diagnosed would be reduced to practically nothing. The writer feels that a physician who neglects to take a nasal culture in every case of rhinitis is doing his patient an injustice, just as he does when he fails to take throat cultures in all cases of sore-throat. Nasal diphtheria must be differentiated from syphilis, tuberculosis, presence of foreign bodies in the nares, and catarrhal rhinitis due to other germs. Cultures will readily detect the presence or absence of the Klebs-Loeffler bacillus.

An old adage says, "where there is smoke, there is fire." When you diagnose diphtheria in an infant, *always examine the mother*. In the reported cases, if not actually suffering from the disease itself, having either the pharyngeal type (as in the mother of the case reported by Giussani), urethral involvement (as in the mother of Rorhler's case), or conjunctival, the mother has been found to be Schick-positive. In view of the latter fact may the writer not suggest that all expectant mothers be Schick-tested during the pre-natal period, those found positive to be protected at once, with the expectation that the infants would participate in the immunity. If the mother should fail to be Schick-tested prenatally, the test should be made during the puerperium and if found positive both mother and baby should then receive toxin-antitoxin.

PROGNOSIS

In a series of 31,028 cases T. T. Crooks found an incidence of 0.7% in infants under one year of age.

Among the latter there was 5.5% of deaths with a fatality rate of 61.9%. Needless to say, the outcome of diphtheria in infants appears to be very unfavorable, and, to my mind, the alarmingly high fatality rate is due to a failure of early diagnosis. To quote Ribadeau-Dumas, Lacomme and Loiseau again: "Diphtheria in the newborn is uncommon only because it is often overlooked," and, may I add to this, often proves fatal.

TREATMENT

The success of treatment in infancy just as in older children depends upon early diagnosis and early administration of an adequate initial dose of antitoxin. Ravenel reports a mortality rate of 65% in 17 infants with the laryngeal form of diphtheria. Six of these had a bloody nasal discharge several days before the onset of respiratory embarrassment. We can, therefore, see the urgent need of early diagnosis and treatment.

The dosage of antitoxin used by most authorities was 10,000 units intramuscularly as soon as the diagnosis was made. A second dose was seldom necessary. The case reported by P. de Elizalde was given 5,000 units on the third day of illness (diagnosed by nasal culture), 6,000 units the next day, 6,000 units four days later, and 6,000 units two days after this. The baby became ill on November 21, and died December 30 from malnutrition and broncho-pneumonia (found on necropsy). The writer feels that an initial dose of 10,000 units might have saved this case.

SUMMARY

1. Diphtheria does occur in infants less than six months of age far more often than we are led to believe by most authorities and textbooks.
2. Diphtheria in infants is mostly of the nasal type.
3. The deadly potentialities of diphtheria in infancy as shown by the statistics given in this paper should forcibly impress upon our minds the imperative necessity of alertness whenever an infant has a nasal discharge that persists, particularly if it is sanguineous.
4. Always look to the mother first as the probable source of infection.
5. *The pre-natal program now in vogue is incomplete without the inclusion of the Schick test on every expectant mother and her protection, if found positive, from the earliest months. It is reasonable to assume that such protection would be shared by the infant, provided toxin-antitoxin were administered sufficiently early.*
6. Nasal cultures are as important as throat cultures as a routine procedure in pediatric cases before they are admitted into the general wards. The procedure is simple, and it will prevent the needless exposure of many children to a case of nasal diphtheria or to a nasal carrier.

32 Highlawn Ave.

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Report—A Case of Diaphragmatic Hernia— Esophageal Type (Hiatus)

BERNARD EHRENPREIS, M. D.
Brooklyn, N. Y.

The occurrence of a diaphragmatic hernia is not very rare, though the study of a particular case is always of interest. In 1911, Eppinger collected 635 cases, in most of which the hernia occurred on the left side. Right sided hernia is very uncommon since the liver is able to close large congenital as well as acquired defects, and thus prevent the herniation. While part of the liver may protrude, nevertheless right sided diaphragmatic herniae are described (Reich) including organs other than the liver. A very remarkable case was that of Freud and Horner, diagnosed by X-ray, in which the hernia contained the stomach, omentum, first portion of the duodenum, pancreas, hepatic flexure, ascending colon, cecum, appendix, and a part of the ileum, the rent in the diaphragm measuring 3 x 10 cm.

The rarity of right sided diaphragmatic herniation of the liver leads me to incorporate here the personal communication of Rendich describing an unpublished case.



P. A. Upright

Briefly, while fluoroscoping the lungs of a male patient of about 55 years, he noted an unusual condition of the right diaphragm, in which during inspiration the inner and outer thirds of what ordinarily constitute the diaphragmatic shadow were normally depressed, while its mid-third ascended; the reverse occurred during expiration. This mid-third was more conical in shape than normal. A diagnosis of incomplete herniation of the liver through the diaphragm was made. Some months later the patient was readmitted to the hospital in extremis and died of a cerebral condition. Unfortunately the pathologist was unacquainted with the previous history and did not examine the diaphragm. However, his description of the liver was such that it fitted the fluoroscopic findings and diagnosis precisely. In his protocol he reported "a grooved liver," the superior surface of the



Upright Left Oblique

right lobe bearing a circular impression, the liver within the circle being raised in a conical fashion.

In the classification of herniae, the esophageal group (Bevan) deserves attention, as its occurrence was thought to be quite rare. But one case of 34 reported by Keith was of this type, while of Eppinger's 635, 11 were so classified. Of 160 operated cases reported by Quenu (France), only two were found herniated through the esophageal orifice. Of 17 cases of diaphragmatic herniae reported in 1924 by Carman and Fine-



Right Oblique Prone



Left Oblique

mann, there was only one case of esophageal hernia. Akerlund, however, is of the opinion that such herniae are more common than these figures would indicate, and feels that this particular type has been overlooked prior to the establishment of the almost routine use of roentgenology for diagnosis of abdominal conditions.

Mrs. E. G., 67 years old; chief complaint—pains in R. U. Q. Difficulty in swallowing for the last 10-15 days; no vomiting, no loss of weight. Recalls regurgitation often in early youth, particularly when bending over after meals; of late has suffered with pyrosis and regurgitation after meals; now also suffers frequently from asthmatic attacks; gradual loss of weight; constipated for last five years; stool small, fragmented; no jaundice.

Examination by means of barium mixture revealed:

The esophagus is normally outlined but displaced to the left in its lower third. The mixture passes from the

esophagus to the right and above the diaphragm to a pouch, which later is found to be the antrum of the stomach, which is in direct relation to the lower part of the esophagus; from the antrum it passes posteriorly into the first portion of the duodenum, which is likewise situated above the diaphragm in the posterior mediastinum. After the antrum becomes filled, the mixture empties into a normally situated pars media and the fundus of the stomach. The duodenum passes directly downward to a small loop resembling the duodenojejunal flexure. These findings indicated a herniation of the stomach and duodenum through the esophageal opening of the diaphragm.

Comment—Inversion of the stomach, such as occurred, is possible in these cases, since the greater curvature is mobile, while the pylorus and the lesser curvature are fixed by the hepato-duodenal and gastro-hepatic ligaments. Periodic discomforts, such as eructation after meals and while bending forward, were found in about one-fifth of the reported cases. These complaints can be explained by constriction of part of the stomach at the



Antero-posterior view, prone

hiatus. It is noteworthy that the contents in the posterior mediastinum did not impair the patient's condition. This fact suggests that the lesion was congenital.

1315 Eastern Parkway.

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A new whole wheat irradiated biscuit, containing vitamins and mineral elements, is described in the February issue of the *Canadian Association Journal*.



Back

Left Lateral

Front

The Distinguishing Features of Ocular Headache

I. S. TASSMAN, M.D.

Philadelphia, Pa.

Headache is perhaps one of the commonest and very often the most troublesome complaint which the physician encounters. It is frequently the only symptom complained of and causes repeated visits by the patient and a number of examinations before the causative factor is revealed, while those afflicted attempt to go about their routine duties always conscious of this regularly occurring pain which acts as a drag on their efficiency and renders them altogether unfit.

Now it should be impressed in the beginning that headache may be present in a patient for more than one reason, and when we remember that in addition to headaches of ocular origin, we have also to think of the headaches of sinus disease, the gastro-intestinal headache, the headache produced by vascular hypertension and by intracranial pressure, as well as those occurring as prodromes and in acute diseases, I believe that nothing should be overlooked in an attempt to establish the cause of the complaint. A careful and thorough questioning of the patient in taking the history, with an earnest attempt to analyze the nature of the headache complained of, is most important in pointing the way to the seat of the trouble, particularly in those emanating from the eyes. When consulted by patients whose chief complaint is headache, I always question them carefully regarding the possible presence of gastro-intestinal complaints, constipation, "colds in the head" or sinus trouble or the presence of any other condition they may be under treatment for by their physician. And for this same reason I feel that all other physicians or specialists should always be mindful of the possibility of the headache being of ocular origin. Naturally since more than one cause may be producing the complaint, correction of only one defect will not entirely relieve the patient. Very often those who are suffering as the result of sinus trouble have, at the same time, a rather high error of refraction which combines to cause the complaint.

Although people vary as to their sensitiveness to ocular defects, among the patients who come to the ophthalmologist, headache is nearly always the chief complaint, and when, in the absence of other pathologic ocular findings, the eyes are refracted, an error of the refractive state is revealed in nearly all. Out of over 9,000 patients examined at the Wills Hospital in 1929 for errors of refraction, only 78 were found who did not require glasses, and whose eyes were in what might be called a normal refractive condition. Now when it is considered that of all people, over 90 per cent are going about with refractive errors of the eyes either corrected by the use of glasses or uncorrected, this condition requires early thought in the consideration of a patient complaining of headache. Again, it should be remembered that such acute inflammatory conditions of the eyes as glaucoma and iritis are nearly always ushered in with headache, usually of a sharp, lancinating character and often described as "tearing." Moreover, they usually occur at night and deprive the patient of sleep. But in these conditions, more or less sudden interference with the patient's vision, and other inflammatory signs of the eye on inspection, may lead the examiner to suspect their presence.

In considering the condition as the result of refractive

errors of the eyes, it should be remembered that this may be produced in one or more of three ways: First, the effect of the uncorrected error itself; second, the constant action of the small ciliary muscle of the eye in most of these patients and third, the additional possibility of a disturbance of the normal balance or action of the rotating muscles of the eyes. Of the refractive errors which cause headache, the worst offenders are hypermetropia or far sightedness and astigmatism, either alone or combined. Myopia or near sightedness, in itself, very rarely causes headache. Astigmatism of itself, particularly of high degree, often causes severe headache. Even though hypermetropia is present in over 70 per cent of all patients examined, they rarely complain of poor vision. On the contrary they often state that their vision for distance is good, which fact is misleading, because it is the same ability of the eyes in these cases to overcome the defect present and maintain good vision which is producing the symptom complained of. The same thing is true of astigmatism, where the eye does not focus images equally in all its meridians, with the result that there is a blurring of objects. The effort of the eye unconsciously to overcome this defect for a time serves to conceal its presence to the patient. The headache, in these conditions, is nearly always frontal or supraorbital. Occasionally it is complained of as beginning in the eyes. In type, they are usually dull or heavy, and often severe enough to cause a patient to lie down. Though it is often the only symptom complained of, it is sometimes stated that the eyes themselves become very tired and "weary." In this connection it is therefore necessary to consider the time of occurrence of the headache and the occupation of the patient, two factors which are closely related to the cause. The patient who arises in the morning with a "clear head" and feels well when he begins his work, only to get a dull, heavy headache about 2 or 3 o'clock in the afternoon, is most likely to have an occupation which requires close application of his eyes, as in the case of bookkeepers, stenographers, accountants, bank tellers, clerks, typesetters, students, seamstresses, and at times even business men occupied with routine office duties. The character of the work, in other words, is an important factor in aggravating the condition of the eyes to produce the symptoms. Everyone has at some time observed the man sitting at his desk sometime during the afternoon who unconsciously removes his glasses while in conversation, holds the lenses up to the light at arm's length, then gently massages his closed eyelids with the fingers, and after cleaning the lenses with his handkerchief, replaces the glasses and continues with his conversation, temporarily relieved. At the same time, this man is conscious of a dull frontal headache, and the eyes are weary and tired. In all probability the glasses are no longer correcting the refractive error present and the eyes are feeling the strain. The blurring is not due so much to clouded lenses but rather to fatigue of the ciliary muscle as the result of the strain put upon it. Or the patient may have an astigmatism which is not properly corrected, because the meridian of the astigmatism is now different from that which the lenses are intended to correct. Nothing will produce headache more quickly and be relieved more easily than this. Poorly fitting glasses in these cases

* Read before the Northern Medical Association, Philadelphia, Pa., March 17, 1930.

act the same or worse than no glasses at all. Usually in midday, the frontal or supraorbital headache occurs accompanied in some by a dull pain in the eyes and blurring of reading matter in a short time and the patient feels ready to give up. In students especially, the eyes become very tired also, and very soon the printed matter blurs so that they are unable to continue. However, in most of these people, particularly if they are young, the vision if tested for distance may be found to be normal. But if the external appearance of the eyes is inspected, there will often be seen an irritated or reddened condition of the margins of the eyelids or there may be a moderate injection of the conjunctiva and also an excessive lacrymation. Sometimes the patient mentions these things in addition to the headache. If the vision is found to be below normal (20/20), and in the presence of these symptoms mentioned, there should be no doubt as to the indications for refraction of the eyes and correction of the error present by glasses.

In young men, headaches sometimes come on while watching a baseball game, or moving pictures, particularly if they have a rather marked astigmatism. Young girls and some children suffer such headaches while riding in a street car or railroad train and because it comes on while looking out of a car in motion, it is known as a panoramic headache. In these patients there may also be an associated nausea and even vomiting. With these complaints, even in the presence of a known gastro-intestinal condition or trouble in some other part of the body, the possibility of an ocular defect should be thought of, and the patient refracted by use of a cycloplegic, such as atropine or homatropine. Concerning the use of these so-called drops, the physician realizes the importance of this, but too often patients are led to believe that their use is dangerous and even think that it may cause blindness. Out of over 20,000 patients examined during the last 4 years at the Wills Hospital, using either atropine, homatropine or scopolamine, I have noted just two who have shown what might be called ill effects from the use of atropine and these because of overdosage on the part of the parents through ignorance. In both, however, the disturbance was mild and very temporary. During the year 1929, I did not find one such instance out of over 6,000 cases examined in this way. It should be remembered that in these patients it is necessary for the purpose of proper refraction to place the eyes in a state of rest. As has already been stated, most of these people have good vision because the action of the ciliary muscle serves to overcome the defect present in the eyes. By its constant contraction whenever the eyes are in use, it regulates the convexity of the crystalline lens and increases or decreases its refractive power, as necessary, in order to maintain a focus on the retina just as rapidly as the eye can change from near to distant vision. This process of changing the form and refractive power of the crystalline lens of the eye is called accommodation, and exercising this accommodation in an effort to obtain normal vision in a defective eye is the principal factor in the production of eyestrain and its effect on the patient. Because of this power of accommodation in young people it is therefore difficult to determine accurately the correction of the refractive error without producing cycloplegia or arresting the accommodation. This action of the ciliary muscle might be compared to the action of the heart muscle in overcoming the effect of a valvular lesion, except that in the case of the cardiac defect, the symptoms are often concealed until decompensation occurs, whereas, in the eye, the symptoms occur even

though the actual defect is compensated by the action of the ciliary muscle.

Headaches in school children are very common as the result of uncorrected eye defects. They usually come on after the child has been in the classroom for a short time, and continue until he arrives home. The headache may then subside if they spend some time out of doors, but is apt to recur in the evening when study is resumed, and continue until relieved by sleep, which very often brings relief in most cases. Blepharospasm or constant blinking of the eyelids is often associated with the headache in these children and should indicate the necessity of refraction of the eyes. Some parents attribute this to habit and too often these signs and symptoms in children are treated too lightly. Usually no importance is attached by parents until the child falls behind in school work or word is received at home from a school medical examiner. In more extreme cases, these children when uncorrected become backward, nervous, underweight and show a general inferiority. Refraction of the eyes nearly always reveals the presence of a marked refractive error.

Occipital as well as frontal headache should indicate the possibility of a disturbance of the ocular muscle balance. Slight variations or differences in the action of the ocular muscle, especially those which rotate the eyes up and down, may cause severe and regularly occurring occipital headache. When the muscle balance is normal, the eyes maintain their position and can be moved without discomfort or signs of muscle strain. But, when there is a difference in strength of the opposing rotating muscles, a desired position of the eyes can only be maintained by an extra expenditure of nervous energy which produces headache and the accompanying symptoms of eyestrain. When one muscle is weak in its action, the eye will tend to deviate in the opposite direction, producing a phoria and interference with perfect binocular vision. When this defect is too great to be overcome, an actual turning or deviation of the eye results. In these patients a refractive error is usually associated with the muscle defect, though not always of high degree. Here again the constant strain on the nervous mechanism is a factor in the cause of headache. A weakness of the converging muscles of the eyes is often found in women who regularly suffer from occipital headache when sewing. Others, moreover, in whom the ocular muscle balance is normal, often suffer headaches when sewing or doing close work because their eyes are not properly corrected with a glass satisfactory for the distance they are working at.

In all of these cases, however, a careful and thorough refraction of the eyes and correction of the error found by the use of the proper glasses will nearly always relieve the headache described.

Obstetrical Analgesia

Morphine has proved unsatisfactory as an analgesic during labor.

Scopolamin, given alone, relieves suffering and does not endanger mother or child, but sometimes causes restlessness, thus interfering with proper asepsis.

Use of magnesium sulphate with scopolamin eliminates the restlessness and provides a simple safe, efficient obstetrical analgesia.—H. S. Fist, M.D., in *Calif. and Western Med.*, May, 1930.

Child Welfare Factors

If a child is to be successful in life, he must have splendid health, sanity of vision, capacity for work and a wholesome attitude toward life. Such is true education—a joint partnership of home, school and community—a training not of the mind alone but of every activity of the child. If this success is to be attained, the fullest cooperation of all organizations interested in the welfare of the child will be required.

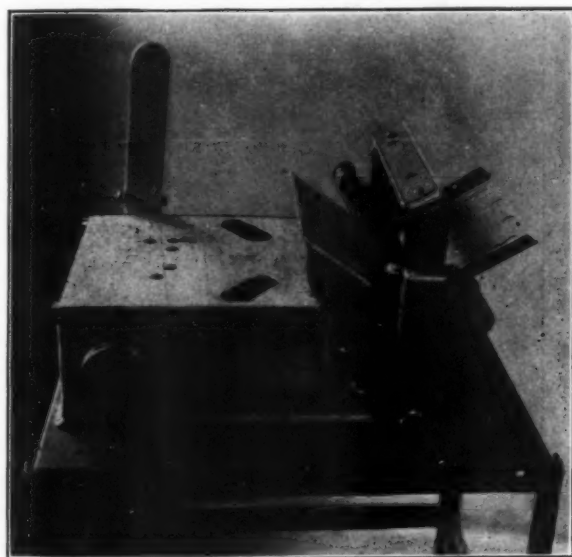
Proceedings of the New York Electrotherapeutic Society

Academy of Medicine, March 5, 1930

Demonstration of an Apparatus for Stretching the Fingers

HEINRICH WOLF, M.D.
New York City

Every one of us who has had some experience with hands injured either by local infections, fracture, arthritis, etc., knows how terribly devastating these injuries are and what disabilities result. It is, of course, possible to treat these patients with our usual methods, but it takes a great deal of time in each case, and the only way to get through with it



The Ostrovsky Manumobilizer

would mean that you would have to spend hours with each patient.

I was, therefore, much interested when the inventor of this instrument showed it to me. It was originally built for stretching the fingers of a musician—a musician with a very small span, and by using this instrument he has been able to get a very much bigger span.

This machine can do practically everything we want to accomplish for the hand: it can stretch each individual finger, can spread the fingers, and move the fingers and hands in various directions; if there are any adhesions it can stretch them. I will ask Mr. Ostrovsky to demonstrate its application on a patient whom I have had occasion to treat in the dispensary.

In this patient the region of the thumb was involved. He had very little motion there. He is using this machine himself. In two weeks he has gained sufficient motion to start work again next week. I only warn not to overdo the exercises, for the reason that too much stimulation might again light up the infectious process.

Discussion

DR. H. D. CORBUSIER: I have had no experience with the instrument, but I really think it is a very ingenious apparatus.

One of the greatest difficulties we have is in the numerous cases of Colles's fracture which have been placed in wrong position or have been splinted too much; they may have had both posterior and anterior splints, and we have numerous cases with ischemic paralysis from splints which should not have been applied, or have been left on for too long a time. Of course, we get these various motions with other apparatuses, but this appeals to me for it is quite positive in its action and is a thing that a patient would use himself in your office, under supervision, whereas he would not do other exercises at home as he should. Before using this machine, however, the case should be given a hot bath, preferably a whirlpool at 100 degrees F., for it is essential that no extension or flexion of the joint, where that much force is employed, should be put upon it unless heat has first been applied to relax the tissues. That is very important indeed.

DR. DEKRAFT: It is a very ingenious machine, but it is just such cases wherein by the use of the light from either a carbon arc lamp or a large thermolite used persistently until you get a hyperemia, and then followed by superficial diathermy, that we get similar results. These are some of the few instances where the so-called cuff method is of utility. For instance, you can put a circular band or clamp around the forearm, and then attach it to one terminal of a high frequency machine, and put a circular band around the hand and get up a hyperemia, and relief of pressure and tension, so that the tendons can slide in their sheaths. Then you can put a circular band around the hand and apply the electrodes; or you can use a glass or other water receptacle and put an electrode in, and fill it with salt solution and put the fingers in one at a time. In one of the cases of contraction of the hands I showed to Dr. E. C. Titus two years ago that followed extensive burns of the face and arms and hands, with big keloid formations, the man could not straighten out his hands. In that case I used nothing but carbon arc lamp for an hour three times a week, and then used the clamps and used superficial diathermy. The men had been burned by a gasoline explosion on a naphtha launch. The insurance company paid him a large sum of money, and said he could never hope to work again; but in the course of a few months he could use his hands as I do, and a little later took care of 200 scows; he could drive an automobile, and his hands were perfectly flexible. The keloid formations also disappeared.

DR. A. B. HIRSH: Dr. Wolf referred to the possibility of extension of infection from mechanical efforts and stretching, such as just described, of phalanges and metacarpus; does he speak from personal experience along that line?

With regard to applying mild diathermy to an extremity: our own experience was that if the part involved was a distal phalanx of the toes or fingers, with a layer of a half inch of water in a porcelain or china container and, as Dr. De Kraft mentioned, the electrode in the water a few inches away, you could apply the current to the distal phalanx and were sure to get it into the affected part. Contrawise, with the fingers placed into a deeper layer of water, the current does not act below the surface of the water.

DR. WOLF: I did not go into the question of treatment. It is quite plain that if we put an extremity, like that hand, into hot water it will be much easier to stretch it at each sitting. I did not intend to show the case for that purpose. This patient is receiving treatment in the dispensary every day.

As far as diathermy is concerned, as the preliminary treatment, just the same holds true. My experience with keloids is not so favorable as that of Dr. De Kraft. I cannot see how heavy scar tissues can be so easily softened. I have used the same method as Dr. De Kraft, but have not been so fortunate as he. My experience with scar tissue has been very unfavorable, and if I keep in mind the pathology of scar tissue, I cannot understand how the treatments mentioned could work that way. I would be more inclined to treat fresh scars with deep X-ray therapy.

As for the question of Dr. Hirsh: I have seen that quite fre-

quently acute inflammatory conditions become greatly exaggerated by mechanotherapy—not by this instrument, for I have not used it long enough; but if we have to deal with an infection with an inclination to exacerbations, mechanical irritation would

be liable to aggravate the condition. I have seen that in other cases treated by others. I personally learn by the experience of others and do not take any chances. It is more or less immaterial to the tissue what irritates it.

Giant Cell Bone Tumors: Four Cases Successfully Treated by Roentgen Rays

L. T. LEWALD, M.D.

PROFESSOR OF ROENTGENOLOGY, NEW YORK UNIVERSITY.
New York City

I used this term to designate the type of lesion we see in the cases reported, and yet it can also be spoken of as osteitis fibrosa cystica, or bone cyst. Some cases that even on section one would think were definitely giant cell type do not always show giant cells, but fibrous tissue and some cystic areas; so that several who have carefully studied this situation, among them Phemister of Chicago, have brought up the question of whether these are the same types of a lesion which has undergone certain degenerative changes. However, speaking of the findings, he says no definite organisms were found in these bone lesions at the time of curettage. That the infection has been overcome and the bacteria have disappeared is possible.

Another theory is that they are not necessarily due to infection but to some undiscovered factor, which Dr. Herendeen may discuss—some undiscovered factor like undeveloped bone tissue. Until we really X-ray every new-born child and find some of these lesions at an early age, we probably will not be able to solve this problem.

The question of the primary treatment of these cases is of interest. *X-ray treatment alone can be used with success.* If surgery is employed, a simple curetting should be followed by X-ray treatment. The question of whether or not a bone graft should be inserted depends on the extent of the cavity at the time of curetting, and if the area involved is a place where weight bearing requires great strength.

The following cases are reported:—

Case 1. K. T. Male. Aged 11 years. Referred to me by Dr. Sayre. Right forearm strained while playing in April, 1925. Later forearm near wrist began to swell and became painful. X-ray examination on October 31, 1925, showed marked expansion of the lower end of the right radius, giving the typical appearance of a benign bone tumor of giant cell type (Fig. 1). The cortex is so thin on the ulnar side that it can just be made out, but there is no definite production of new bone in the soft parts. The lower end of the involved area extends to the epiphyseal line. The upper end is two inches above this point. The diameter of the lesion is $1\frac{1}{2}$ inches, whereas, the normal bone on the other side is $\frac{1}{2}$ inch in diameter. The epiphyseal line for the lower end of the opposite ulna is slightly less developed than on the side of the lesion.

He was re-examined on December 14th, 1925, at which time the former findings were confirmed. On December 30th, 1925, was re-examined. There was no apparent change in the radiographs compared with the previous ones. Moderate voltage X-ray therapy was agreed upon by Dr. Sayre and myself.

On February 24th, 1926, he had his first treatment. Another one week later and a third treatment three

weeks after that. Radiographs then showed that the trabeculae appear more clearly defined.

On March 31st, 1926, had fourth treatment. Radiographic examination at that time showed definite increase in calcium deposit along the borders of the tumor.



Fig. 1. A. (Case 1). Giant cell tumor involving the lower end of the radius. (B) Cured after a series of X-ray treatments.

This was particularly evident at the diaphyseal side of the epiphyseal line along the ulnar side of the tumor.

5th treatment. April 10th, 1926. X-ray examination shows still further improvement in calcium deposit since last examination.

6th treatment. June 7th, 1926 (8 weeks since previous one). X-ray examination showed definite increase in the trabeculations in the cystic area. Also slight thickening of the cortex as compared with the previous examination. *The width of the lower end of the radius has decreased both in the posteroanterior and lateral projections as compared with previous radiographs.*

7th treatment. June 30th, 1926. Further improvement noted.

8th treatment. July 21st, 1926. Further filling in of the rarified areas in the lower portion of the right radius.

9th treatment. August 11th, 1926. Further increase in bone formation noted.

The 9th to the 15th treatments were given at intervals of a month. Each time radiographs were made showing further improvement in bone formation. Last

treatment was given on January 17th, 1927, making 15 in all.

On March 19th, 1927, radiographs were made and showed continued improvement in the appearance in the lower end of the right radius. There is a remarkable formation of dense bone, especially along the outer border of the radius. This would appear to be ample

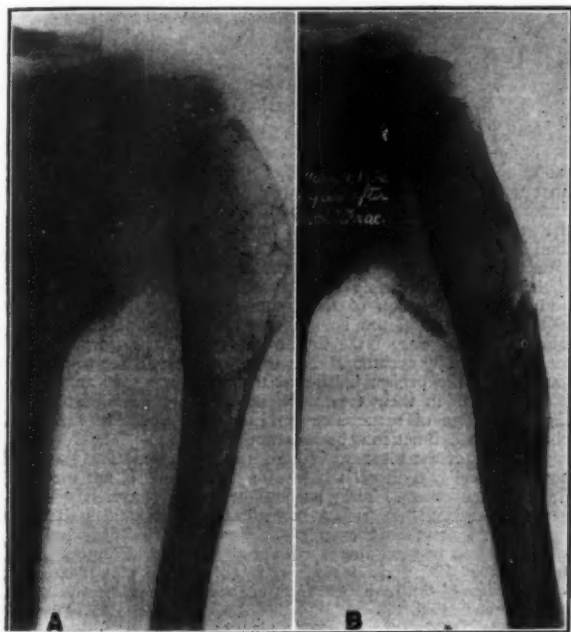


Fig. 2. A. (Case 2). Giant cell tumor (osteitis fibrosa cystica) upper end of humerus. (B) Cured after a series of X-ray treatments. Note the remarkable filling in with dense bone.

to protect against pathological fracture. There is also a dense production of bone along the posterior border. In spite of the fact that there are a few remaining areas of less density about the ulnar side of the lower end of the radius, the condition is regarded as entirely free from any tendency to recur (Fig. 1. B). There is no evidence of any retardation of growth in the bone. Since that time radiographs were made at intervals of 6 months and further improvement noted.

The growth of the bones of the right forearm has equalled that of the opposite side, and the tumor has entirely disappeared. The skin is perfectly normal over the area treated by X-ray.

Case 2. H. G., Male, Aged 10, October 12th, 1925. Referred to me by Drs. Sayre and Tamis.

In July, 1924, patient suffered a pathological fracture. Was struck by another boy who was swinging his books and struck him on the right arm. Cast was applied, and in a few weeks the bone had united. Had second pathological fracture about three months later, again placed in plaster cast. At this time all the other long bones were X-rayed and found to be negative. A few months later had some inadequate X-ray treatment at a hospital. A third fracture occurred while being treated. Operation was performed and the cystic region was curetted, but was not all removed. Cavity was allowed to fill with blood clot. Wound healed. Was re-examined about October 5th, 1925, and showed a cystic bone cavity two inches long, up to, but not involving the epiphysis (Fig. 2.A). Another operation was advised for the purpose of inserting bone chips but X-ray therapy was then begun. On March 1st, 1929, a fourth pathological fracture occurred as the boy was

playing baseball. After the fracture united, more active X-ray therapy was given and now, about eleven months later, there is almost complete replacement of the cystic areas by healthy bone formation (Fig. 2.B).

Case 3. M. K., Female, Aged 7½ years. Referred by Dr. Sayre, April 1st, 1927.

Had previous X-rays taken about two years ago (1925). She had no pain and gave no history of injury. The reason that she was X-rayed was because an aunt noticed that she limped. No pathological fracture. Radiographs showed an area of diminished density in the right femur involving the upper portion of the shaft, extending from a point 2 inches below to about one-half inch above the lesser trochanter and measuring about one inch in transverse diameter. There is a margin of uninvolved cortex of bone measuring about one-eighth of an inch on the inner side and about three-sixteenths of an inch on the outer side in the anteroposterior radiograph. There were faintly outlined trabeculae extending throughout the area in question (Figure 3.A). On lateral exposures the outer border of the involved area shows a thinner cortex than the inner border but the cortex is intact throughout. With the femur rotated in, the outer border of the cortex is about half the thickness of the inner border. With the femur rotated out, the outer surface of the cortex appeared to be about two-thirds of the thickness of the inner. There was no evidence of there having been a pathological fracture. No evidence of extension through the cortex or other signs of malignancy. The appearance was that

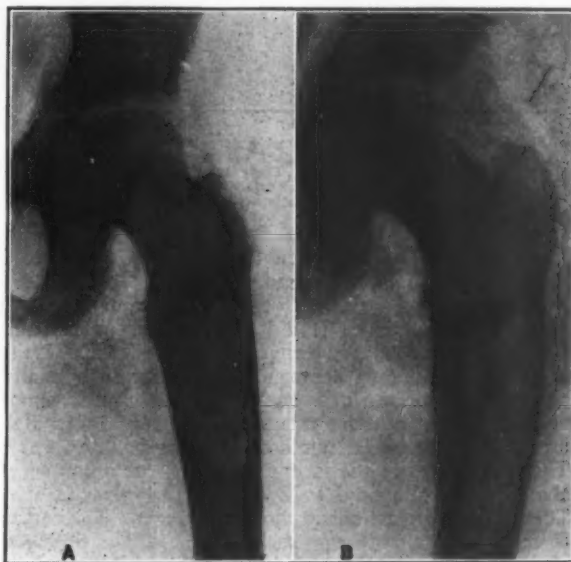


Fig. 3. A. (Case 3). Giant cell tumor (osteitis fibrosa) upper end of femur. (B) Note remarkable filling in with new bone resulting in almost complete healing of lesion.

of osteitis fibrosa or bone cyst. Treatment was begun the same day, April 1, 1927, and six treatments were given on an average of one a week. After the first treatment improvement was noticed in slight increase in the density about the decalcified area.

Three treatments were given at intervals of two weeks. Radiographs showed further improvement in the area of diminished density in that the margin was distinctly denser, particularly along the outer border. There was also a suggestion of increased density in the trabeculae. The next treatment was six weeks later. A series of six treatments were given at monthly intervals. Radiograph taken after the 18th treatment showed that

the bone appeared to be developing in a normal manner compared to the opposite side. The margins of the rarefied areas appeared to be slightly increased in density. She was also taking cod-liver oil, limewater, and a calcium phosphate compound at this time. She was apparently walking without any limp (July 5th, 1928). Twenty-two further treatments have been given at monthly intervals. On May 8th, 1929, radiographs showed the bone formation to be so solid that the danger of pathological fracture could be excluded. The lesion is now practically healed (Fig. 3.B).

Case 4. B. S., Female, Aged 8 years, was first seen

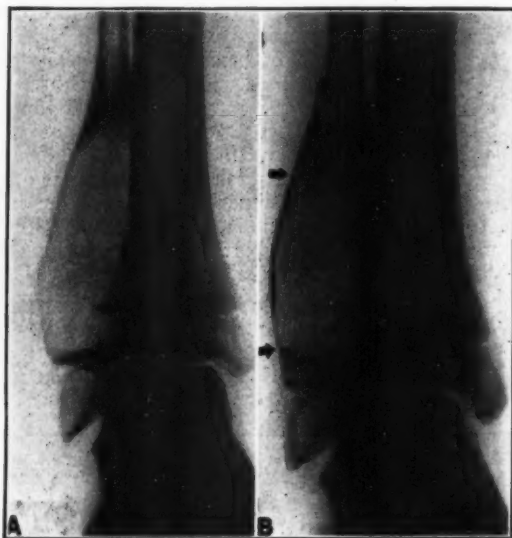


Fig. 4. A. (Case 4). Giant cell tumor lower end of fibula. (B) After X-ray treatments note the borders of the involved area show definite filling in with new bone. The case is still under treatment and complete healing may be expected after several months, in spite of the slow response to treatment.

November 23rd, 1928, when a diagnosis of giant cell tumor of left fibula, lower end, was made.

About 7 weeks previous to the X-ray examination she had turned her ankle. It did not give her much pain, but there was some swelling. The distal end of the shaft of the left fibula is expanded, the cortex is thin, and gives the appearance of a bone cyst or giant cell tumor involving an area about two inches in length extending to the epiphyseal line, but not involving it (Fig. 4.A). The shaft of the bone is expanded so that it measures about 3 cm. compared to 2 cm. on the opposite side. There are trabeculations in the rarefied area. The cortex is thinned to almost egg shell thickness, but does not show any fracture although it might be easily fractured by direct violence. Diagnosis of benign giant cell tumor or osteitis fibrosa cystica was made and X-ray treatment was advised. The first treatment was given on November 23rd, 1928, followed by a second treatment three days later, and a third two days after that. There were 12 days between the third and fourth treatments. Seven treatments were given at from 3 to 7 days intervals. Radiographs were made after each treatment but not until ten treatments had been given was there definite evidence of improvement (Fig. 4.B). Improvement was noted at each subsequent examination. Twenty-six more treatments were given at an average of one a week. On April 20th, 1929. (5 months after the X-ray treatment was started) very marked improvement was noted in the amount of lime salts and bone formation in the lesion about the lower end of the

fibula. On lateral exposures distinct improvement was noted in the center of the lesion. Fifty-one treatments have been given altogether, and the case now shows sufficient filling in with healthy bone to insure the patient against pathological fracture and complete healing is now only a matter of a short time. No interference with growth occurred and the skin is normal over the treated areas.

CONCLUSION: Giant cell bone tumors can be cured by X-ray therapy. This method should be used in preference to surgical intervention.

Discussion

DR. R. E. HERENDEN: Dr. Le Wald leaves very little for discussion, for he has covered the subject so thoroughly. The radiation results in the treatment of these tumors constitute a distinct triumph for roentgenotherapy. Probably no other group of tumors has furnished the interest, speculation, and controversy that this group of bone tumors has supplied for perhaps more than half a century. Pathologists and radiologists or roentgenologists along with surgeons are intensely interested in every phase of the subject. Probably Nelaton was the first to write a comprehensive description of these tumors. He and contemporary workers recognized the benign character of giant cell tumors. Bloodgood was one of the first to show that a large percentage could be cured by curettage. Nevertheless, we still see to-day, regardless of the benign nature of these tumors, that amputation is resorted to in their treatment, but is must be admitted that the percentage of recurrence is fairly high and that failure to obtain a good functional limb is not uncommon. The roentgen-ray therapy of these tumors is highly satisfactory. The surgeons, however, feel that there is a loss of time which is not met with following curettage. This, perhaps, was quite true eight or ten years ago, when these tumors were first being treated with roentgen rays; since then the technique has been modified, and it is quite common to treat these patients ambulatory. Thomas splints are often applied and the patient is able to go about and earn his livelihood—while under treatment or waiting for adequate bone regeneration.

The question of etiology is still highly obscure. As Dr. LeWald has shown, there is some doubt in the minds of pathologists as to whether these tumors should be placed in the field of neoplasms; they are frequently associated with trauma, but, on the other hand, one often sees these cases or meets with them where on examination there has been no history of trauma of any sort. As to the inflammatory character of the lesions and the effect of trauma in producing the tumor, it may be that they have their origin in an inflammatory process, followed by a bone cyst; through injury or for some reason proliferation of cells of the lining membrane occurs and the process develops into a definite growth which may remain benign or become malignant, depending on many factors, such as location, repeated injury, and character of treatment.

DR. D. E. EHRLICH: I have greatly enjoyed this presentation; it was most comprehensive and I can add little to it. I would like to say a few words on just one phase of the question. These youngsters that Dr. LeWald presented tonight—their roentgenograms showed the expansion that one gets in giant cell tumors, but they seemed to be more of the unicellular rather than the multicellular type; in cases which I have seen previously in adults they seem to be more of the multicellular type. I wonder how Dr. LeWald feels on this point in relation to the differential diagnosis from simple cysts.

DR. S. M. BAUM: The cases of giant cell tumors presented by Dr. LeWald tonight are a very interesting group of bone tumors from the standpoint of sensitiveness to radiation therapy. The beneficial effects of X-ray therapy for this group of tumors has been known for a good number of years. They are both sensitive to medium and high voltage X-ray therapy. The first case of giant cell tumor that I had the opportunity of treating was one where there was an extensive involvement of the entire pelvic girdle. High voltage X-ray was used and a successful result was obtained.

The interesting thing about these tumors is that they are equally sensitive to radium therapy, although there may possibly be an advantage in using X-ray therapy where a tumor is extensive and involves the shaft or the epiphyseal ends of the long bones. This fact has been beautifully demonstrated tonight by Dr. LeWald's series of cases. In the giant cell tumors of the superior or inferior maxilla, however, I believe there is a distinct advantage in employing radium therapy.

Recently, Dr. Lachari  t  , of The Radium Institute of Paris, reported the successful treatment of five cases of giant cell tumor of the maxilla by radium. Surface application and intra-

tumoral radiation were used. These cases have now remained well from three to nine years. I have under observation three cases of giant cell tumor of the mandible that have remained well after radium treatment from thirteen to twenty-six months. One case was an adult and two were children. In one child the tumor recurred after radical surgery. I employed removable platinum-filtered radon seeds, allowing these to remain in situ for eight to ten days. The total dosage varied from 1200 to 2000 millicurie hours. In my series of cases, only one treatment was necessary to obtain a successful result, and this, I believe, is the advantageous factor in radium treatment of giant cell tumors of the maxilla.

Another interesting fact about this peculiar group of bone tumors is that the recurrences after surgery or radiation are equally sensitive to treatment and behave similarly to the primary growth.

DR. LEWALD, closing: I have a patient with a tumor of the mandible which Dr. Dunning has just scraped out; one pathologist regards the tissue as malignant and suggests that some radical procedure be performed. The sections were shown to an-

other pathologist today, and he said he would not consider it malignant. There is great difficulty in the histological differentiation of tumors of this sort. This case is in a young woman, and instead of taking out half of the jaw, the X-ray had better be tried, or I also believe that radium could be used rather than a radical operation. One of the other cases was treated with radium and it was successful.

I believe that Dr. Herendeen's method of using a more intense radiation and getting a rapid response is the proper way of handling these cases. I believe he went through the experience of over-radiating, and I had the experience of under-radiating; but now one can feel assured that moderate radiation will give a proper result in a short time and a satisfactory one, without endangering the patient by a severe reaction.

As to Dr. Ehrlich's remarks about the cellular structure, I can add nothing to what I have already said, except that some tumors which are unicellular may contain giant cells, and some tumors which are multiloculated or trabeculated do not show giant cells, as in Case 2 shown tonight.

A Case of Tuberculous Sinus Illustrating the Value of Roentgen Rays and Radiant Light

VICTOR C. PEDERSEN, M.D.
New York

DR. PEDERSEN presented the following instructive case of tuberculous vesicocutaneous sinus cured by roentgen rays and radiant light. The urinary disease began twelve years previously during pregnancy, and probably as a colon-bacillus pyelitis, now recognized as common in pregnancy. Appendicectomy was done at about the fifth month. Tuberculosis became engrafted on the pyelitis necessitating a right nephrectomy, and later a right hemicystectomy. Extreme distension of the bladder (for which the patient was responsible by disobedience as to catheterization) broke the suture line in the bladder and produced the sinus. All known methods of curing the bladder and the sinus failed until roentgen rays and radiant light were persistently used.

Twelve irradiations, next a vacation of about thirty-six days, during which radiant light was used at home, and then another course of irradiation healed the sinus in about the fourth month of treatment, at about the sixteenth irradiation. The sinus closed at the fourteenth month of its existence. This second course was completed, and half another course was given eight months later.

The radiant light was given chiefly at home by the patient herself, many hours each day from a 200 watt lamp.

The roentgen rays were developed by a 16-plate high-speed static machine with a gas tube backing up a five-inch spark gap. The filter was $\frac{3}{8}$ " of sole-leather and 3 mm. of aluminum. Distance, 8 inches.

For twenty years or more, Dr. Pedersen said, he had had satisfactory results and no skin lesions with this technique.

An arc or radiant light treatment is used after the fourth, eighth, and twelfth, or after the sixth and twelfth irradiations to protect the skin.

In bladder work, his cross-fire method uses the right and left suprapubic regions and the perineum, three, four, or five days apart. Thus the same field is reached in nine, twelve, or fifteen days.

The diagnoses of tuberculous and colon bacillus infections were absolute.

Dr. Pedersen thought the lessons of the case were these:

- (1) Necessity of cultural examination of the urine

in all pyurias, hematurias, pollakiurias, and most bladder disturbances.

- (2) Elimination of the organisms present before pathogenesis, if possible, by attention to intestinal flora and local measures—always including physical measures.

- (3) Recognition of the unfavorable tissues for plastic surgery in these fistulae and the conditions on which they depend.

- (4) Restoration of these diseased tissues by physical measures either to a natural cure, as in this patient, or to a state more likely to render a plastic operation successful.

- (5) Definite recognition of the fact that operations in such cases are always in reserve, and that they are less and less warranted until physical measures have had a sane and careful application without conclusive results.

- (6) Without the slightest attempt at unfavorable criticism, he cannot escape the conviction that the roentgen rays and radiant light, carbon-arc light or ultraviolet irradiation should have been used before fulguration of the ulcers or removal of the ulcerated bladder wall was attempted. It is almost certain that a nonoperative cure would have ensued.

- (7) The day cannot be far distant when during remote aftertreatment postoperative tuberculosis will be given the advantage of out-door climatic life, exactly as medical pulmonary tuberculosis is managed. One of the sources of recovery in this case is that she was blessed with pure air and sunlight in a suburb, and not cursed with tenement-house life in New York City.

45 West 9th Street.

Vitamin Content of Honey

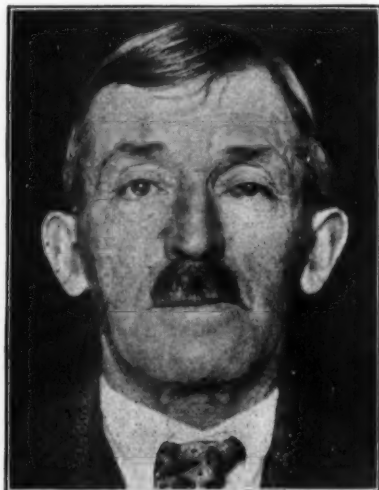
The experiments recorded in the literature suggests that honey is not a good source of vitamins. Since these tests were made, vitamin research has progressed considerably, and it therefore seemed advisable to test honey by the more refined methods now available. Two representative samples, one a fresh English comb honey and the other a West Indian granular honey, were obtained for the purpose, and tested, and both were found to be deficient in vitamins A, B₁, B₂, C and D. Tables and curves show the results. As shown by other workers, honey is not a source for these vitamins, and this deficiency is not due to deterioration consequent on treatment or storage.—E. Hoyle, *Biochem. J.* 23: 54, 1929.

Epidermoid Carcinoma of Face

Report of two cases

G. ALLEN ROBINSON, M. D.
New York

Case 1. L. B., aged 58 years, was referred to me for radium treatment December 19, 1925. A large ulcerated growth 2 x 1 x .5 centimeters was present on the left cheek just below the eyelid. The edges were indurated



L. B.—Healed Basal-celled Epidermoid carcinoma of the cheek

and presented the typical picture of a basal-celled carcinoma. The condition had existed for two years and had been treated by various ointments and ultraviolet radiation. The patient thought at first the ultraviolet radiation improved the condition, inasmuch as the small ulceration had healed, but the lump did not dis-

solve. A few months later, however, the condition was much worse, ulcerated, bled easily and was painful.

The first radium treatment consisted of the insertion of ten milligram radium needles for two hours into the base of the growth. Subsequent surface treatments were given during the next three months amounting to 1050 milligram hours. The condition remained healed until April, 1928, when the upper edge of the scar near the eyelid became indurated and active. Seven gold implants of one millicurie each were inserted into the base of the growth. The condition healed and has remained well to date (See photo).

This case is presented to show that ointments and ultraviolet radiation are not curative of basal-celled carcinoma; that a large ulcerated and indurated growth is best treated by the use of platinum radium needles or radon implants, and that the patient should be observed at intervals of a few months over a period of years, because of the likelihood of recurrences in the edges or near the site of the primary lesion.

Case 2. J. C., aged 60 years, was referred for radium treatment on July 30, 1928, with a large superficial ulceration which covered most of the external nose. A small ulcerated growth was present in the lower lip one centimeter in diameter. The nose condition had existed for many years, but the lip tumor for only a few months.

Surface gamma radiation, using 50 milligram radium tubes, was applied to the nose, amounting to 875 milligram hours. A smooth, soft scar replaces the original growth. The lip tumor received two gold implants of 2 millicuries each, which caused the tumor to disappear.

This case is of interest because of two distinct malignant tumors about the face and of the good cosmetic effect on lip and nose.

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Pitfalls in Abdominal Diagnosis

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Surgery is always revealing things new and interesting, for no two patients seeking surgery present exactly the same conditions. For this reason new circumstances are continually arising and new lines beneficial to the patient are discovered.

No doubt every surgeon can look back over a decade or two and recall cases upon which he has operated and realize, if the same cases should occur today, how much better he could cope with the situations.

Not all patients having conditions demanding surgical interference recover. As we look back upon these fatal cases of years ago the thought comes to us that if we had the same cases today, the patients would have recovered. Again, if a patient, whose condition demanded surgery, after the operation obtained a rather unsatisfactory result, and at times a second or even a third operation was necessary before the result was satisfactory to the patient and surgeon, then the thought

comes to us that we might have done better today with the same case.

Such thoughts as these come only after years of experience during which many hard knocks and unsatisfactory results, the true experience of every active surgeon, have been one's lot. For this reason it sometimes is at least satisfying as well as educational to quietly take account of stock or in other words make a mental inventory of these years. If one goes on from day to day and merely considers the activities of this day and its results, one must progress very slowly. If one really takes a true inventory covering a decade or two of surgical experiences, one must make progress in self education.

With this idea in mind the following reports of interesting mistakes are summed up with the hope that the benefits derived may reach others and assist them in their future endeavors.

Some two decades ago the following case came under our care.

Case 438.—Miss B. Age 22 yrs. Single. Occupation: Secretary. Family and past history: not important.

Physical illness:—During the previous three years she had attacks of severe pain in the right lower abdomen. This pain was not associated with menses and did not occur at any special time. As time went by this pain became more severe, sharp in character, and at times she was nauseated and at other times she would vomit. Nothing special was noted in the character of the vomitus. At no time had she seen evidence of blood in the urine. During the six months previous to her coming to us, the attacks had been so frequent and severe that she was obliged to give up her position. She had sought the services of several physicians and various diagnoses had been made as indigestion, dyspepsia, growing pains, misplacement of pelvic organs, etc., but she had obtained no relief.

Physical Examination:—revealed a thin, wiry individual, mentally depressed and physically worn out. During the previous year she had lost some ten pounds in weight and had become pale and weak. Examination of the abdomen revealed a thin, rather poorly muscled wall moderately tense all over. Tenderness and muscular rigidity was most pronounced over McBurney's point. Laboratory findings showed a haemoglobin of 75 per cent white and red blood count about normal. Urinalysis did not show anything abnormal.

Diagnosis:—A diagnosis of recurrent appendicitis was made and the patient advised to have the appendix removed, to which she consented.

OPERATION:—Appendectomy.

PATHOLOGICAL FINDINGS:—showed a kinked, retro-caecal appendix with two fecal concretions in the lumen. Microscopical examination confirmed the diagnosis of involved appendix.

NOTE:—This patient made an uneventful recovery and was discharged from the hospital in fourteen days. She subsequently returned to her home in Vermont and four weeks from the date of her operation she had a recurrence of her old trouble. She went along for two months during which time she had these similar attacks. Finally she went to another surgeon in a Vermont city and he advised an exploratory operation to which she consented. At this operation a stone was removed from the right ureter. She made a satisfactory recovery and has been perfectly well since. She subsequently married, raised a family and has been strong and healthy.

COMMENT:—Here is a true mistake in diagnosis or at least if she had been troubled with her appendix evidently it was not the true cause of her disability. An x-ray picture previous to her first operation might have saved her a second experience and the intervening disability. This was not done as she could not afford the extra expense. Today our methods of investigation would have this done as part of the routine regardless of her financial standing.

CONCLUSIONS:—One should always make a clear differentiation between appendicitis and stone in the ureter. X-ray and cystoscopy would clarify this diagnosis.

Case No. 12626. Mrs. G.—Age 40 yrs. Married. Occupation: Bookkeeper. Family history: unimportant. Past history: She had never been pregnant.

Physical Illness:—Three days previous to an attack she would begin to have a dull pain in the lower abdomen. During this time she had a persistent frontal headache and now and then would have attacks of chills

and sweats lasting for an hour or so. These attacks would subside and she would feel a little better. At no time had she vomited. During the previous twenty-four hours the pain became more severe and continuous. This pain seemed to be all over the lower half of the abdomen with no special area of tenderness. She had been in bed during the previous three days. For the past six months she had considerable leukorrhea. Up to that time she had been free from this discharge. She called her family physician on the third day because she had not obtained any relief from rest in bed. The patient admitted a possible specific infection some time previously.

BOWELS:—constipated.

APPETITE:—fair.

SLEEPS:—poorly because of pain.

MICTURITION:—normal.

This patient was referred to the hospital with a diagnosis of possible pyosalpingitis, admitted and placed under observation.

Physical Examination:—W.D. & N. General appearance of one in fairly good health with no evidence of recent sudden loss of weight. However, her facies was that of one suffering pain and apparently septic. T.100. P.90. R.22. Abdomen:—Flat, tense with fairly thick and moderately well muscled wall. Tenderness and muscular rigidity was marked over the entire lower half of the abdomen where digital pressure elicited pain at all points. Suggestion of dullness was present over this half with tympany above but this apparent dullness was not altered by change in posture.

Vaginal Examination: speculum vision revealed a pearly gray discharge from the external os. The vagina was coated with a like secretion. Smears were made and culture taken. Bimanual examination revealed a normal sized uterus, with the fundus posterior and semi-movable. Both broad ligaments revealed a sense of induration and were tender, as were the tubes and ovaries.

LABORATORY FINDINGS:—Smear negative. Culture vaginal flora. Urine, negative. Blood-Hgb. 75, R.B.C. 4,500,000. W.B.C. 12,500. Dif. Ct. Poly. 65. S.M. 28. L.M. 6. Eos 1.

PROCEDURE:—A staff consultation was held and it was determined to wait a day or two for further observation. During this observation the general condition remained about the same. There were no chills.

DIAGNOSIS:—Pyosalpingitis (bilateral) most probable.

OPERATION:—Two days after admission laparotomy was performed.

Findings: the lower abdomen was filled with a thin, flocculent pus of a marked colonic odor. At the root of the caecum was found a gangrenous, perforated appendix with few adhesions. About a pint of pus was removed and drainage instituted. The patient was returned to bed in fairly good condition and the usual supportive measures administered.

CONVALESCENCE:—The patient drained very freely but made a good convalescence and was discharged well at the end of five weeks.

POST-OPERATIVE DIAGNOSIS:—Acute, gangrenous, perforated appendix with peritonitis.

COMMENT:—It would seem to us that this case should have been clearly diagnosed upon admission and operated upon at once. We offer no excuse for the failure to make a correct diagnosis but we are stimulated to be on the lookout for future similar cases.

Case No. 18419. Mrs. B. Age 54 yrs. Married. Occupation: housewife. Family history: negative. Past history: negative. Had always worked very hard.

Physical illness:—Two days ago sudden onset of se-

vere pain in the right mid-abdomen. This pain persisted and during the previous few hours had become spasmodic and very severe. She had vomited a greenish fluid several times. She was referred to the hospital by her family physician as an emergency.

Physical Examination:—F.W.D. & N. General appearance of one acutely ill. Thin, wiry woman. Appears acutely prostrated and in extremis.

Abdomen: Very flat, tense, with thin, poorly muscled wall. Tenderness and muscular rigidity very marked over the mid area of the right side with this tenderness extending downward to the right lower quadrant. There was dullness over this entire area which was persistent upon change in posture.

Pre-Operative Diagnosis:—Acute, ruptured appendix with localized peritonitis. (Immediate operation was decided upon.)

OPERATION:—Right rectus incision.

FINDINGS:—A mass of adhesions with the omentum walling off a mass the size of a large cucumber. The omentum was bluntly dissected away and beneath it was found a gall bladder eight inches in length extending down to the root of the caecum. This gall bladder was red and beefy and filled with gall stones. The gall bladder was freed, incised and the stones removed and the gall bladder drainage instituted. The appendix was not involved.

Post-operative-Diagnosis:—Cholelithiasis, Cholecystitis with adhesions.

COMMENT:—We offer no excuse for the failure to make a correct diagnosis. The question of stools was answered negatively previous to operation. The experience of this case has made us more accurate in a definite diagnosis on subsequent similar cases. However, no doubt we will some time make a like error. It should be stated that the decision to operate at once was proper and as the outcome was a success we feel that the judgment, at least, bringing about this decision was correct.

Case No. 18623. Mr. H. Age 26 yrs. Married. Occupation: laborer. Family history: negative. Past history: not important.

Physical illness:—During the previous three years he had several attacks of pain in the right lower abdomen. These attacks of pain would occur almost any time of day, would last two or three days, and gradually subside. During the previous year these attacks had been more frequent and severe and seemed to be centered about a point just below and to the right of the navel. The last attack began twenty-four hours before, had persisted, and been very severe. Now and then during these attacks he would vomit and the vomitus would consist of a greenish material. He had never noticed blood in his stools or urine. His weight had remained about the same during the previous three years. Always following these attacks he would have a lameness in his right side which would persist for two or three days and then go away.

BOWELS:—constipated.

SLEEPS:—well.

APPETITE: good.

MICTURITION:—O. K.

Physical Examination:—W.D. & N. General appearance of one in fairly good health with no evidence of recent, sudden loss in weight. T.99.6, P.90, R.22. **Abdomen:**—flat, with moderately thick, well muscled wall. Tenderness and muscular rigidity marked over the right lower quadrant. Meltzer +. The tenderness did not change location upon change of posture. No

dullness and no digital impression of induration were elicited.

It was explained to the patient that undoubtedly his trouble was appendicitis and an operation was recommended. He consented and entered the hospital for operation the following day.

OPERATION:—Appendectomy (McBurney incision).

PATHOLOGICAL FINDINGS:—The appendix was kinked, slightly enlarged and was located retro-caecal with the meso-appendix thickened.

POST-OPERATIVE:—He made an uneventful recovery and returned to his work in about four weeks. He worked continuously and felt well for the next six months, at the end of which time he had an attack similar to those previous to his operation.

Physical Examination:—Tenderness and muscular rigidity were marked over the same areas as previous to the operation. In addition, however, the right kidney lower pole could be easily felt and the kidney felt twice the size of a normal kidney. Percussion supported this estimation of increase in size. He was referred to Dr. John Deitch for cystoscopy and catheterization of ureters and to Dr. J. S. Bragg for x-ray examination.

Dr. Deitch's report showed the right ureter completely blocked at a point three inches below the kidney pelvis. X-ray revealed a well encysted stone at this point with the ureter above dilated and the kidney shadow twice normal size.

The condition was explained to the patient and an operation advised, to which he consented.

OPERATION:—Right loin incision revealed a kidney twice normal size with a hydronephrosis so advanced that the kidney was practically destroyed functionally. For this reason it was deemed advisable to do a nephrectomy.

PATHOLOGICAL FINDING:—Large, encysted stone right ureter two and a half inches below kidney pelvis. Kidney distended to twice normal size and tissue has undergone pressure necrosis.

POST-OPERATIVE:—Patient made an uneventful recovery and has remained well over a period of six years.

COMMENT:—Possible cystoscopy, catheterization of ureters and x-ray would have saved this patient a great deal of suffering as well as a second operation and the second hospitalization. The appendix was found involved at the first operation but possibly was not the direct seat of trouble, and had the right ureter been the objective at the first operation the kidney might have been spared and possibly no further trouble have come from the appendix.

SUMMARY AND CONCLUSION:—

Case No. 438. This case would have been one of a clear and correct diagnosis had the investigation been done completely. In the effort to save the patient expense the possible real cause of the trouble was overlooked. Although the appendix was involved no doubt, the stone was in the right ureter at the time the appendix was removed, and if it had been removed at that time, excluding any appendectomy, the evidence would point toward satisfactory and complete recovery. This, however, would not have ruled out a possible subsequent appendix attack.

Case No. 12626. Here we have a case of ruptured appendix with a general lower half peritonitis. Of course, she should have been operated upon immediately upon admission. However, the board-like rigidity of the lower half of the abdomen coupled with a history of possible old genital tract infection was rather misleading and the possibility of bilateral pus tubes prevailed.

This error in judgment, of course, might occur again at any time, but such an experience certainly keeps one more alert for future cases of like nature. The laboratory findings were not pronounced enough for a definite decision.

Case No. 18419. Of course a markedly elongated gall bladder with the tip extending down to the root of the caecum, with a history of acute onset, no previous attacks, no history of jaundice, or gall stone colic, and with the laboratory findings not pointing toward other things more definitely than an appendix, the fact remains that subsequent errors in similar conditions are possible. However, the experience of this case would make one extremely careful and insofar as operative procedure is concerned the time for operation and the procedure itself would clear any future complications for a final satisfactory result.

Case No. 18623. It would seem to us that this case could have been clearly diagnosed and no excuses should be made. It appeared like a truly recurrent appendix and the laboratory findings coupled with the temperature and physical findings seemed to warrant this. How-

ever, we are now more cautious about making a definite diagnosis in similar cases without first examining the genito-urinary tracts for exclusion of possible stone in the ureter. We cannot say that in every apparent appendix we do this for differentiation, yet, if there is the slightest doubt we do. We feel that in this particular case the kidney could have been saved if the condition had been properly treated at the first operation.

GENERAL REMARKS:—Any one doing general surgery is liable to mistakes in diagnosis. We are not always fortunate enough to find out these mistakes and to have the opportunity to correct them ourselves. It should be the aim of all surgeons to make an accurate diagnosis following a complete physical examination and thorough laboratory investigation. However, no matter how plentiful the supply of information and the number of years of experience we still find that we are all making errors. Our duty is to immunize ourselves against the liability to these errors, continue to endeavor each year to improve our methods, and never to be negligent.

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Superior Pelvirectal Abscess, its Symptoms and Diagnosis

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Pus may accumulate in the pelvis without marked constitutional disturbance and therefore an abscess may attain considerable size before it is recognized. In most cases the difficulty of establishing a diagnosis is because of the indefiniteness of the symptoms and yet all cases give a history of antecedent illness or trauma with evidences of pelvic infection later. The ease of diagnosis therefore varies with the clearness of the history, the size of the abscess and the extent of involvement of other organs.

If there is a history of previous injury or ulceration of the rectum or sigmoid, our patient first notices a feeling of weight in the rectum and a bearing down sensation, then chills come on intermittently for several days, the temperature rises, sometimes as high as 104 F., the pulse rate is increased, there is a moderately high leucocyte count of 12,000 to 20,000, and malaise appears. The patient is usually uncomfortable, restless and generally miserable but not acutely ill. The clinical picture is that of general sepsis, masking the local symptoms to so great an extent that the true nature of the illness is not discovered until late in the course of the disease. Thus, according to Brooks¹, a mistaken diagnosis of typhoid or malaria may be made.

In the post-operative cases the patient appears to be doing well for the first few days, the pulse rate and temperature falling to normal where it had previously been raised. Then the temperature rises again. Diffuse abdominal pain and tenderness are complained of but there is no rigidity. This complete absence of abdominal rigidity is a cardinal sign of localized pelvic pus. Abdominal distention comes on and cannot be relieved even though there is thorough intestinal evacuation.

The late symptoms arise from the abscess itself, rather than from the underlying pathology, and,

therefore, do not differ much regardless of the primary focus.

Pain deep in the pelvis, gradually increasing in severity, begins as a feeling of warmth or fullness in the perineum or up within the rectum. It becomes sharply severe when the bladder or rectum is distended and especially so during the acts of urination or defecation though it is promptly relieved after these organs are emptied. This pain may radiate to the pubes, lumbar region or down the thighs.

Tenesmus of the bladder and rectum is troublesome although variable in degree. Some patients have to urinate every few minutes. This difficulty of urination sometimes amounts to actual obstruction of the urine because the large abscess compresses the ureter. In elderly men these symptoms may be mistaken for hypertrophy of the prostate. Cases have been reported in which the abscess was not recognized until the bladder was opened to remove a suspected enlargement of the prostate.

Constipation sometimes results from obstruction of the rectum, but usually diarrhea exists instead. There is a constant desire to defecate, a constant rectal tenesmus and the passage of mucus.

So constant is the triad of symptoms that it is almost pathognomonic.

Digital examination at this time will find the anus patulous; considerable clear, odorless mucus filling and escaping from the bowel. Upon abdominal palpation there may be an ill defined tender mass rising from the pelvis, but when distention is gross, this may not be very evident. The perineum may be seen to bulge when pressure is made over the mass pushing it into the pelvis. The most definite information is obtained by digital examination through the rectum. A bulging is noted of the anterior rectal wall, which when suppuration has ac-

usually developed, becomes soft and edematous. In a classical case there is a firm, rounded mass filling up the hollow of the sacrum and situated immediately above the prostate in the male. It is tender and on bimanual examination is found to be continuous with the mass already discovered on abdominal examination. Fluctuation is not easily detected as the pus is under tension and only the tip of one finger may be used to elicit the sign. It is therefore inaccurate to say that fluctuation can be felt because it is impossible to grasp the abscess between the rectal finger and the hand over the abdomen and fluctuation cannot be detected with one finger. There is no interval between the mass and the prostate; the finger, as it passes up along the latter gland, is abruptly stopped and diverted almost at right angles backward into the hollow of the sacrum by the bulging wall of the abscess. Pressure by the finger tip, even though gently applied to the mass, is resisted and fails to empty it, unless there is imperfect formation of adhesions to wall off the collection from the general peritoneal cavity. Occasionally flexion of the thigh is noted and immediately makes one think of a collection of fluid in the iliac fossa or possibly lower down in the pelvis. There is often edema of the external genitalia.

By the middle of the third week the mass presenting in the rectum feels much like the stage of labor in which the child's head and the membranes are pressed against the cervix, represented by the anal muscles. The patient develops a peculiar nervous condition, shortly after which there is a sudden escape of an enormous amount of pus of foul character, with almost immediate relief to the patient. A quart of pus may escape when such an abscess is vented.

As soon as the abscess is ruptured, spontaneously or surgically, the temperature and pulse rapidly return to normal and the patient is relieved of all his symptoms, including a prompt return to normal of urination and defecation.

Seminal vesicle and prostatic foci must be sought for, though their early symptoms are very indefinite. Because of the extension of a low grade infection fortified by the colon bacillus, the process extends beyond the prostate and vesicles into one of the several spaces about these structures and terminates in a small percentage of cases in a real intestino-vesical fistula. This infection may be present without giving definite urinary symptoms, and can produce, depending on the direction and extent of the process, ischiorectal abscess, superior pelvirectal abscess, posterior pelvirectal abscess and, by lymphatic extension, localized suppuration about the kidney either outside the capsule or above the sheath of the psoas muscle.

In the acute prostatic suppurations the starting point is usually in the prostatic urethra or the tissue of the prostate itself. Resistance of the capsule of Denonvillier usually operates in producing urinary symptoms and usually the infection is directed forward, terminating as a prostatic abscess. In the less acute infections, however, the process begins in the loose tissue surrounding the vesicles, and it may extend from the prostate by thrombosis or through the lymphatic channels.

Morrissey² in a study of 14 male cases found the etiology to be trauma in 3 cases, infection in 6, and postoperative in 5 cases. The infection traveling around the rectum and along the surface of the levator ani muscle collected in the ischiorectal space

in 1 case; in the superior pelvirectal space in 9 instances, and in the posterior pelvirectal space in 4 individuals.

The digital findings per rectum are very characteristic. The prostate or the seminal vesicles are usually acutely diseased and very tender on manipulation. One or both lobes of the prostate may be involved and the entire rectal surface of the gland must be palpated for changes in size and consistency. In early cases, in which the abscess is small and the destruction of tissue is limited, there may be some doubt about the diagnosis. In the advanced or well developed cases the diagnosis is easy. The globular outline may be three or four times the size of a normal prostate. It may fill the whole side of the pelvis. Kretschmar reports one as large as a peach. Its surface is soft, smooth and fluctuating. Sometimes the mass extends upwards filling the pelvis, and at others it bulges into the rectum. If suppuration is far advanced the abscess may rupture during the examination and a gush of bloody pus escape from the urethra or rectum. If the abscess points close to the rectum it may easily be mistaken for an ischiorectal abscess.

When an abscess of the prostate points alongside the rectum or when it appears above the symphysis pubis, it should no longer be considered a true abscess of the prostate. Some authorities are of the opinion that this sort of abscess is a periprostatic suppuration or phlegmon, but most authorities call it a periprostatic abscess.

When there is a periurethral suppuration above the triangular ligament originating either in Cowper's or Littre's glands, there is a fullness and often fluctuation found in front of the apex of the prostate, either on one or on both sides of the membranous urethra. There is also an edematous condition of the tissues of the anterior wall of the rectum. The edema sometimes extends up over the posterior surface of the prostate. Infection of Littre's or Cowper's glands may, however, destroy the deep layer of the superficial fascia and extend into the ischiorectal fossa.

In well advanced or well developed cases of abscess, the diagnosis is easy. In the early cases, in which the abscess is small, that is, before there is much destruction of prostatic tissue, there may be some doubt about the diagnosis. Occasionally a definite, circumscribed area of pain and tenderness is of assistance in recognizing the abscess early. In instances of difficult and painful urination or defecation, when there is deep seated pain or tenderness in the perineum, or when there is a perineal swelling, an examination by rectal and external palpation should be made to detect suppuration. It is not necessary to wait until an abscess is fully developed in the perineum and fluctuation is present to decide the diagnosis. As soon as periurinary or perirectal infection is discovered an operation is indicated to prevent further extension and to hasten the patient's recovery.

Pus in the female pelvis, secondary to inflammatory disease of the uterine adnexa, presents rather distinctive symptoms. There is pain in the lower abdomen on one or both sides, worse during menstruation, increased by exertion and constipation, and not relieved by the recumbent position. The rectal pain is increased proportionately as the abscess lies deeper in Douglas's pouch in proximity to the rectum and vaginal fornix. Acute symptoms may appear from time to time due to the trauma,

which releases some of the encapsulated bacteria or their toxins, to the accumulation of feces or gas above a point of constriction in the intestinal coils adherent to the pelvic structures, or to a new or fresh infection of the pelvic organs.

The course of a given pelvic abscess depends on the nature and virulence of the infection, the condition of the genital organs whether resting, pregnant or puerperal, whether or not there are injuries such as tears or bruises to the neighboring tissues, and finally upon the vital resistance of the woman. A gonorrheal infection pursues a course different from that due to the streptococcus, and either of these infections is more serious during pregnancy or the puerperium than at any other time. An accidental streptococcus infection during an operation upon the utero-vaginal canal in a non-pregnant state does not give a clinical picture of the same severity as a like infection following abortion, miscarriage or labor. During pregnancy and the puerperium the anatomic changes in the lymphatics and the blood vessels favor the development of lymphangitis, phlebitis and septicemia.

Examination per rectum in this type of abscess shows a dense hardness of the pelvic mass. If the exudate involves the paraproctium at the point where the uterosacral ligaments surround the rectum, the lumen of the bowel will be narrowed, and to the palpating finger at this point it will feel like an auger hole in a board, covered with the rectal mucosa. If suppuration occurs, the parts lose their stony hardness and fluctuation, and abscess becomes manifest within a few days. When the abscess is small and does not bulge into the vagina or rectum, it may be difficult to detect fluctuation but there is an edematous feel to the tissues. In the case of pelvic peritonitis the pelvic mass is apt to fill up Douglas's pouch and press the anterior rectal wall backward, instead of surrounding it as it does in cellulitis.

An appendiceal abscess, of the iliac type, may later settle into the true pelvis and present definite tumefaction in the pelvis, impinging on the rectal wall. In such cases the abdominal tumor may be found to disappear as it gradually sinks into the pelvis.

In the pelvic type of appendicitis the abscess may be a direct consequence of a diseased or ruptured appendix (perityphlitis) and its main expression, yet the symptoms may not be those of a typical appendicitis. The clinician may be misled by the anomalous symptoms. The area of maximal pain is not situated at McBurney's point and the pain is diffused over the pubic region. Ballooning over the pelvic region, vesical pain and disturbances of urination are frequent. Royster³ says that the pelvic appendix (which type is most often associated with pelvic abscess) is characterized by absence of severe early pain and that not until the appendix has perforated (generally at its distal end) are urgent symptoms noted. Royster explains the absence of pain by the fact that tension is not present because this type of appendix can empty itself and the first serious pain results from perforation. In the series of cases reported by Schmidt, the symptoms suggested urinary tract involvement, i.e. difficulty of urination, vesical tenesmus and a rounded suprapubic mass which could easily be felt through the rectum and appeared to be connected with the bladder. These symptoms of course were due to pressure from the abscess mass.

It often happens that nothing can be felt in the

whole abdomen and only an uncertain inflammatory swelling, boggy or edema of Douglas's pouch in females, or the vesicorectal pouch in males.

It is sometimes difficult to exclude possible localized thrombosis of the pampiniform plexus, which occasionally occurs in the puerperal period.

Ruptured tubal gestation presents an intraperitoneal swelling, but it is also connected with the uterus.

Renal colic and acute colitis are also to be taken into account.

TUBERCULOUS SALPINGITIS

In two patients reported by Lock⁴ convalescence was complicated by the appearance of a fecal fistula. In one of these cases an examination of the pus found at the operation showed the presence of colon bacilli as well as tuberculous material. In the other a small piece of the left ovary had been left adherent to the rectum.

PROGNOSIS

Spontaneous cure by absorption of the pus may occur. In preaseptic days when surgeons were afraid to enter the peritoneal cavity abscesses were known to have disappeared. But such a course is only a possibility and an uncertain one at that. As long as there is active infection in the pelvic tissues there is danger of serious complications and, therefore, it should be removed. Quite a number of these abscesses rupture spontaneously into the rectum, bladder or small intestine, after which the symptoms immediately subside and the patient usually rapidly recovers. In this manner a spontaneous cure is effected, although the cause of the abscess may remain to be treated. In less fortunate cases the pus may burst through the protective adhesions limiting the collection above and infect the general peritoneal cavity. It is the danger of this that urges the surgeon to interfere.

30 N. Michigan Blvd.

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The Psychology of Childhood

The last decade or two of the nineteenth century was a great time for those interested in the psychology of childhood. This was the period when G. Stanley Hall was making his investigations and inspiring his students to carry on researches of their own. . . . The child study movement in America may, perhaps, be said to have started with the publication of Hall's study of the Contents of Children's Minds on Entering School. . . . Some of the important books of the earlier period were written by men who had had no experience either as teachers or parents. The educational writings of Herbert Spencer and of that wise old dissenter Rousseau still pay large dividends to mothers and teachers who take the trouble to read them. The rather widespread notion that only those who have children of their own know anything about child training is erroneous. Teachers and parents are so close to the irritations of the home and school that their perspective is likely to be distorted. It is difficult to be psychological amid the interruptions and annoyances of children, even though the children are one's own. Consequently, the advice of spinster aunts, whose philosophy about rearing children is a perennial joke, often contains more wisdom than the experience of the harassed mother or teacher.—Swift, E. J.: *The Psychology of Childhood*, New York, D. Appleton & Co., 1930.

Chest Expansion

The average chest expansion of a school child or young woman is from one-half to three-fourths of an inch. This deficiency may contribute to anemia.

Osteochondritis of the Spine*

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The patient, Master R., seven years of age, was presented with the following history.

The chief complaint was the deformity of the lower spine which had been present two years.



Master R.—Osteochondritis third lumbar vertebra.

The patient is the fourth child and the delivery was normal.

At six and a half years of age the patient had an attack of measles. Has had frequent attacks of tonsillitis. Has had a discharge from his ear since he was six months of age.

His father and mother are alive and well.

He has two sisters and one brother who are alive and well.

About two years prior to his visit, the patient fell down stairs, the distance of four steps. He was not disabled in any way as a result of this accident.

One year later the mother noticed a "gibbus" at the lower part of his back. There was practically no disability or pain accompanying this deformity. The mother said that she took the child to her family physician who told her that it was rheumatic and prescribed medication and liniment. After carefully carrying out instructions she was rather disappointed that the deformity did not disappear so she consulted another physician.

This physician had X-ray examination of the spine made and then referred the patient to the writer.

Examination at this time revealed a fairly well

nourished child, forty-five inches tall, who weighed forty-one and a half pounds.

His posture was good and the spine was straight. In the upright position there was no deviation of the spine but on sitting down there was deviation to the right.

Some muscle spasm was elicited.

Tenderness on direct pressure was not elicited.

There was no pain on jarring the spine.

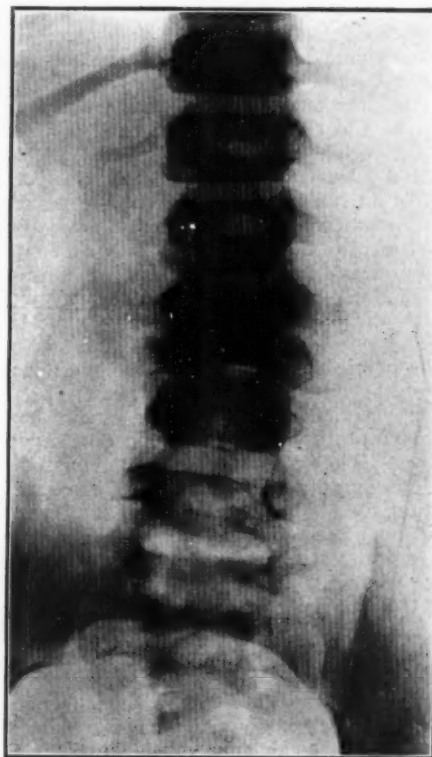
The movements of the spine were somewhat restricted in all directions.

While these movements were painless the patient seemed to favor the spine in performing them.

The kyphos which was about the size of a silver dollar was situated in the lumbar region. It did not disappear on extension of the legs with the patient in the recumbent position.

There were no evidences of rickets.

X-ray examination revealed wedging of the third lumbar vertebra, and an indistinct and irregular outline of this vertebra. The intervening intervertebral spaces between the second and third and the third



Master R.—Osteochondritis lumbar vertebra.

and fourth lumbar vertebrae were widened.

Considering these findings and the clinical picture a diagnosis of osteochondritis of the spine was made.

A plaster jacket with the spine in extension was applied and the patient was seen at intervals of two weeks for a period of a year.

* Case presented at a meeting of the Society of Alumni of Lebanon Hospital, February 11, 1930.

During this time frequent X-ray examinations were made and the pathological lesion in the third lumbar vertebra did not extend either above or below.

The patient gained in weight and his general condition improved immensely.

In 1925, Calve wrote a paper entitled "A Localized Affection of the Spine Suggesting Osteochondritis of the Vertebral Body with the Clinical Aspect of Pott's Disease." He cited two cases. In 1927, Buchman referred to the work of Calve, reviewed the work on allied conditions and added two cases of his own. In October, 1927, Boorstein reported three similar cases.

Vertebral osteochondritis is characterized by deformity of the spine in the form of a knuckle or a generalized kyphosis or scoliosis but with very little or entire absence of pain.

The X-ray usually shows only one vertebra affected, which assumes a cuneiform shape. There is absolutely no involvement of the discs above and below the diseased vertebra. The cartilage is usually thicker and there is often new formation of this tissue.

The etiology is unknown as in the cases of Perthes's disease, Osgood-Schlatter and Koehler's diseases.

Immobilization in a plaster-of-Paris jacket or a brace is sufficient. The patients usually make a very rapid recovery.

The condition occurs mainly in young children, is insidious in onset and usually begins with fatigue, very slight pain, stiffness of the back and knuckle formation. Only one case thus far reported had "night cries".

CONCLUSIONS

1. Osteochondritis is characterized by deformity of the spine in the form of a kyphosis or scoliosis, with very slight or entire absence of pain.

2. The roentgenograms usually disclose only one vertebra affected, which assumes a cuneiform shape. There is absolutely no involvement of the discs above and below the diseased vertebra. The cartilage is usually thicker and there is often new formation of this tissue.

3. The etiology is unknown but may be similar to that in Perthes's disease of the hip, Osgood-Schlatter disease of the tibial tubercle and Koehler's disease of the tarsal scaphoid.

4. The treatment is immobilization.

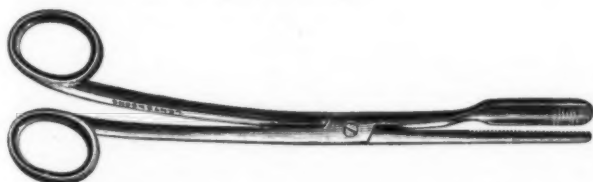
5. The prognosis is good, but the deformity usually persists.

1018 East 163rd Street.

New Instrument for Endocervicitis

SWITHIN CHANDLER, M. D.
Philadelphia, Pa.

The purpose of this article is primarily to report the subjugation of many persistent vaginal discharges which are due to endocervicitis or disease of the glands imbedded in the cervix uteri. In 1903, I reported finding gonococci of Neisser in the glands of the cervix uteri. This has been confirmed and it has been stated that the Neisser gonococci disappear from the cervix uteri in about six weeks, but leave in the great majority of cases an infected number of glands in the cervix uteri. In tabulating fifty cases as to the cause of a vaginal discharge, in my practice, thirty were due to infected glands of the cervix uteri, giving these an incidence of 60 per cent in this series of cases, and when we consider the multitude of causes of vaginal discharge, this must be admitted to be a high percentage.



Every gynecologist and surgeon has had to face the problem of vaginal discharge and has treated it palliatively and radically, that is, giving douches, mildly antiseptic, or douches which are strong, with astringents such as alum. Caustic applications, such as nitrate of silver 25 per cent and over, and lactic acid have been used. In spite of the treatment, both mild and severe, the discharge has continued, to the annoyance of the physician and often to the disgust of the patient, leading eventually to amputation of the cervix uteri. It was due to so many complications and discouragements that

I have for years been working on this condition and have now, I think, evolved the solution of the problem, which is, namely, the use of the instrument shown in the cut and described. There will be reported but three cases, merely to illustrate the paper and show the value of the new instrument.

Case No. 1. Mrs. D., aged 42, a woman in good health and apparently without any evidence of disease, except an expression of worry. The history of the case, as far as the cause of infection is concerned, is negative, but she stated that she had had a discharge for nearly four years. The discharge for several weeks would be profuse, thick, yellowish and accompanied with an odor. She would have a remission of this condition for a week or two and then the discharge would return and cause her mental and physical distress. The discharge caused her to wear a protection and all the annoyance attendant upon a thing of this kind was hers. The examination confirmed her statement as to the nature of the discharge, and staphylococci and some colon bacilli were found to be present. The speculum being used, the cervix was found enlarged, elongated two inches at least in length, with several points of discharge on the surface of the cervix.

TREATMENT: This case having passed, long previously, the acute stage, the instrument was therefore employed. The instrument's rounded, corrugated blade was inserted into the cervical canal and the slightly curved blade placed outside of the cervix, and gentle pressure was made while in this position. Several discharges of pus, undergoing liquefaction, were expressed by this manipulation. The operation was continued by turning the instrument to the right and, in succession, taking up the adjacent areas of the surface until all of the cervix had been compressed and the liquid pus removed from

the glands. A douche of permanganate of potassium (5 per cent) was then given and the patient returned daily for a week. At the end of this time the pressure instead of being mild was increased in degree, and the deeper portions of the glands were compressed and relieved of their contents, while the douches above mentioned were given after each operation. At the end of two weeks the glands were nearly free; however, some of the deeper seated structures contained cheesy matter. Patient returned every other day for next two weeks, and after each series of compressions the permanganate douche was given. After five weeks there was no more involvement of the glands that was evident when the compression was used, but the patient returned once a week for three weeks to be sure that all the glands were clear. After the patient had remained without discharge for three months, she returned and the elongated cervix was removed without any complications. The control of the diseased glands by this method made an operation without infection very possible. The wound healed perfectly and the woman has been in excellent condition ever since (now one year).

Case No. 2. Miss R., aged 22, became infected with the gonococci of Neisser. EXAMINATION. Locally in the vagina and cervix there was evidence of a typical infection of gonorrhea. This case was in the acute stage, the disease having been contracted but a few days prior to the time of my examination. She was, therefore, given antiseptics internally and mild 1 per cent douches of permanganate of potassium daily. This treatment was continued with more or less regularity for six weeks, at which time violent inflammatory conditions had subsided, leaving a congested, enlarged cervix and a characteristic cervical gland discharge. This condition being present, the instrument was used for the first time with slight compression, which was gradually increased around the whole of the cervix. With this slight compression there was exuded liquid pus. There still were some gonococci of Neisser present in the expressed discharge. The patient was given, in addition to the permanganate douche, a mild zinc douche and asked to return in one week's time for treatment daily. She was then treated daily by compression with the instrument, then every other day, and at the end of four weeks the discharge from the cervix had entirely disappeared, and repeated examinations for gonococci proved negative. This case had an involvement of Skene's glands. The urethra was dilated and compressions was used on the dilator by the finger in the vagina, and in the course of a few weeks the infection cleared up. The woman has been perfectly free from any discharge for ten months and repeated examinations have disclosed no evidence of any infection.

Case No. 3. Mrs. E., a woman aged 30 plus. Previous history pertaining to this particular case shows that she was exposed to the infection in the early part of February, '28. Three days afterward she noticed a discharge and at the same time had distress in the lower part of the abdomen and genitalia. This continued for several weeks, running a typical clinical picture of gonorrhea.

EXAMINATION made two weeks after the time of contact showed a thick, yellow discharge, the cervix greatly inflamed, the contour no longer smooth but elevated; the glands in the cervix were affected and pus could be easily exuded from them. The vaginal mucosa was involved in its entirety, but the infection did not seem to involve Skene's glands at any time as far as could be ascertained, but there was a burning sensation when passing urine due to the infection around the meatus.

TREATMENT: This woman was put upon mildly astringent and antiseptic douches for ten days. At the end of this time strong solutions of nitrate of silver were applied in addition. At the end of four weeks from the time of infection, the acute inflammatory condition greatly subsided. The instrument was used and the glands of the cervix systematically squeezed and relieved of their contents. Repeated examinations by the laboratory always reported the presence of the gonococci of Neisser. Six weeks from the time of infection the gonococci in all pathological reports were declared absent, but the involved glands still continued to fill up. Under the treatment of using the instrument to extract the pus from the glands, these improved immensely. Within eight weeks from the time of original infection and but a couple of weeks from the time of using the instrument, the discharge from the cervix had practically stopped. As a precautionary measure, for two weeks afterward, the cervix was compressed by the instrument for any remaining debris, which was indeed very slight. From that period, up until a few weeks ago, the patient has had absolutely no trouble whatsoever, and there has been no vaginal discharge.

The inflammatory condition before I saw her had spread to the tube and ovary on one side and this necessitated, a few weeks ago, the removal of the infected tube and ovary. The rest of the pelvic contents, being normal, were not disturbed. Years before, this woman had had a child and, during the birth, the cervix was bilaterally torn, leaving ragged edges. Due to the continued scar and the elongated cervix at the time of the operation above described, the cervix was amputated and a specimen sent to the laboratory in the hospital. A copy of the report follows:

Microscopic examination shows surface content of scarified squamous epithelia interrupted in a few fields. Beneath this is cellular interstitial connective tissue containing numerous glands with epithelia and mucus content. A number of these glands are dilated to cystic proportions. I could see no evidence of malignancy in these sections or other pathological conditions.

Thus will be seen, from the varieties of endocervicitis and their character, the value of the instrument. Many more cases could be added, but the point which I desire to make is the subjugation of endocervicitis from any of its causes except malignancy. Care should be taken in gonorrheal cases not to use the instrument too soon. I have had no bad results to support this statement, but have refrained from using it on the principle that a violently inflamed organ should be put at rest. The instrument, used at the proper time, in my hands has proven uniformly successful. It was made by Charles Lenz & Sons, Philadelphia, Pa. The original model, at my request, was made by Mr. Fred Jones, who is associated with this firm. Central Medical Building.

The Changing Aspect of Aural Problems

The changing character of aural diseases has occasioned a change in treatment. This change is more in the way of prevention. Serology in the prevention of infectious diseases; the treatment of focal infections; cardiovascular therapy; vaccines for colds; ultraviolet therapy as a winter tonic during the season when the resistance to infection is lowest and the potency of the germs is greatest; early paracentesis in middle ear disease and more accurate appreciation of mastoid involvement; the beneficial effects of the exhibition of tin in furuncles; greater vitaminic scrutiny of food and general hygiene; the effort to offset the bad effects of urbanization by sedulous health boards in the matter of ventilation and unnecessary noise; all these may diminish catarrhal diseases and nervous defects. It is the latter which is on the increase and is producing, prematurely, senile deafness.—George B. McAuliffe, M.D., in *Med. Jour. and Record*, May 21, 1930.

A Maneuver Employed in Normal Labor for Minimizing Perineal Lacerations

JOSEPH S. DIASIO, M.D.
New York City

One of the opprobria of obstetrics is laceration of the perineum often occurring during the second stage of labor. Despite the statement that injuries to the perineum, which are of very frequent occurrence, cannot always be avoided even under the most skilful treatment, much indeed can be done toward the diminution of them by the application of a maneuver that insures proper protection of the perineum during the labor. It is common knowledge that perineal lacerations occur much oftener in primiparous than in multiparous women. To quote from Williams' Textbook of Obstetrics, the following figures are available with regard to the frequency of the lacerations of the perineum, according to the gravidity of the patient, during parturition: "Schroeder observed lacerations of the perineum in 34.5 per cent. of the primiparae and in 9 per cent. of the multiparae, Olshausen reported 21.1 and 4.7 per cent. in his cases respectively, and Williams' experience revealed slight tears implicating the fourchette to occur in about two-thirds of all primiparae and in 19 per cent. of the multiparae."

The literature is punctuated with a plenitude of diverse devices for preventing perineal tears. A few methods that might be mentioned chronologically are those of Giffard, in 1733, John Harvie, in 1767, Goodell, in 1871, and other measures by a host of obstetricians right up to the present time. In most of the older schemes, protection to the perineum was afforded by the application of direct pressure to it, while the newer ones seem to favor an endeavor to extend the head and prevent it from being suddenly extruded during the acme of a pain without any pressure applied to the perineum. Hence, the principles of the earlier and more recent contrivances are radically different and antithetical.

A maneuver that has served me very satisfactorily in a large number of cases of labor for lessening tears of the perineum is a manipulation embodying the underlying principles of both the older and newer methods stated above. That is to say, the *modus operandi* is to give support to the perineum simultaneously with the pressure adjusted to the head to prevent its sudden birth through the vulva. In every labor case, I have taken advantage of the "side delivery", standing on the right side of the patient who is sterilely draped and in proper position for childbirth. As soon as the vertex distends the vulva, the palm of the right gloved hand, which is covered with a sterile towel, is applied directly to the perineum, making firm pressure, while the thumb, index and middle finger of the other hand, by means of a piece of sterile gauze, exert forcible pressure against the vertex during each pain. Thus, the perineum is allowed to dilate slowly without tearing by means of the right hand which, serving as a splint, is placed on the perineum. During the pain, the perineum, which is normally three inches in thickness, thins out so that the muscles and rectum are pressed posteriorly and eventually there is nothing but skin remaining. In the interval between pains, the head is permitted to recede, but an effort

is made to maintain the head always flexed, in order that the suboccipito-bregmatic diameter, which is the smallest diameter of the head, may pass through the vulva at birth instead of the occipito-frontal diameter. This procedure is repeated with every pain until the head is so far born that the vulva is distended by the parietal bosses as well as by the descent of the head on the perineum. At this time, a finger of the right hand is passed behind the rectum to seize the chin from without. With occiput engaged under the symphysis pubis and the mentum held by the right hand, the head is delivered in the succeeding periods between pains. For this purpose, the patient is instructed to open her mouth and to pant during the next pain without bearing down, as the forward and upward pressure fixed to the chin delivers the head through the vulva. Subsequently, the remainder of the second and third stages of labor is terminated in the usual fashion. No anaesthesia or analgesia were employed in any of the cases reported in this paper. This report comprises all the vertex presentations including only the L. O. P. and R. O. P. that rotated anteriorly.

At the completion of every delivery, the perineum and vagina were inspected meticulously, both externally and internally, for tears and lacerations, in good light, with the necessary repair effected expeditiously. A record of the degree and kind of lacerations was kept in each individual case.

Of a total of 537 labor cases reported in this article 484 were delivered in the hospital and 53 had parturition at home. These were distributed among 210 primiparae and 327 multiparae. First degree lacerations of the perineum involving the fourchette were observed in 56 primiparae and in 35 multiparae. Fortunately, second and third degree lacerations of the perineum or tears extending through the sphincter ani were not seen. In all those cases in which the perineal lacerations were sustained, definite and justifiable cause for their occurrence was disclosed either in the finding of a relative disproportion between the size of the baby's head and the mother's outlet, or in the existence of a narrow pubic arch. The percentages of lacerations of the perineum ascertained in this series of cases are the following: 27 per cent. in the primiparae and 11 per cent. in the multiparae. Even though it may be said that these figures might appear to some very preposterous or perhaps to a few somewhat incredible, the truth remains that they actually register the value and merit of a maneuver artifice that is responsible for the paucity of perineal lacerations in this large study of cases.

CONCLUSIONS

1. The maneuver described above is a simple, safe, practical, and worth while stratagem.
2. It offers proper protection to the perineum during labor.
3. Lastly, if this technic doesn't completely obviate perineal tears, it certainly curtails them sufficiently to warrant a trial.

180 East 111th Street.

Proceedings of the Society of Medical Jurisprudence

Academy of Medicine

Modern Chemistry in a Medico-Legal Case: Rate of Elimination of Chloroform from the Brain

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PROFESSOR OF CHEMISTRY, WASHINGTON SQUARE COLLEGE

This being a Society of Medical Jurisprudence, and as this is the first time I have been asked to address this Society, I thought it might be interesting to say something about the duties of the toxicologist of New York City. No doubt some of you know something about them, but my experience has been that many people, even in the Police Department, know very little or perhaps nothing about our Department. The office of Chief Medical Examiner was first inaugurated in 1918 as a successor to the old Coroner's system. I want to point out one or two things about the Coroner's system and the Medical Examiner's office. It is only in New York, and in Boston, that we have a medical examiner's system. Within the last year or two a medical examiner's office has existed in Westchester Co. The coroners, as most of you know, in the majority of cases are not medical men. Anybody can be a coroner. A plumber or a carpenter can be a coroner, and he can sign out deaths as due to heart failure, or tuberculosis, or something else. A County Physician is a physician, but you must bear in mind that a pathologist is a specialist. Most of the county physicians are ordinary practising physicians. Of course, they can be trained and perhaps there are one or two good county physicians, but they are few and far between. We have now in New York City a Medical Examiner's Office, and in this office the cause of death has to be scientifically determined; the findings are at once filed in the office of the Medical Examiner; it is a great point that the pathological findings are in our files, and remain permanently on file for anybody to see. They cannot be changed, and when the case comes up, those files are taken and the testimony is given from them. The office as a whole I am not going to talk about, because Dr. Norris is better qualified to tell you about it than I am, but having the honor of being in charge of the chemical part of the Department, I would like to say a few words about that. Our Medical Examiner's Office should have four divisions: a pathological, a histological, a bacteriological, and a chemical or toxicological department. Thus far we have only two. We have no bacteriological and no histological divisions. All work of this sort Dr. Norris pays out of his own pocket. Even for the toxicological and chemical department we had a terrible time getting the authorities in the Board of Estimate and Apportionment to see that they were necessary. It took a long time before finally consent was given.

I will run over the things which we do in this Department. It is situated in the 29th Street building of Bellevue Hospital, and all the material from the other four boroughs is shipped to that building for analysis. Autopsies are done in the respective boroughs by the Medical Examiners in those boroughs, but when a chemical analysis is to be done, the material is shipped to the Manhattan laboratories. We analyze tissues for poisons; we also analyze for alcohol. We do work to determine whether a person found in a burning building

really died of the fire, or whether he was dead before the fire started. We analyze cases of drowning, to see whether they were really drowned, or whether they were dead before their bodies reached the water. We analyze human blood stains, medicines, and whiskeys, and identify hairs, paints, etc. Annually about 3,600 organs are analyzed chemically from about 1,600 bodies. Besides doing that work the Chemical Department is also consulted by the Police Department. The Police Department sends materials for analysis. We are also consultants to the District Attorneys of the five boroughs. We have a lot of court work to do, and that takes a lot of time. Lastly we do research work, as time permits.

You can see from the outline of this work that we have very little time left. The Staff is insufficient. I had only two assistants and now I have three for all this work, and all of them are untrained men from the toxicological standpoint. Two of them are still studying at night to get their first college degree. When these boys have been with me two or three years, the low pay which they get necessitates their looking around for something else, and they usually leave me and start the study of medicine. Then I am forced to get a new boy and train him again. You can see that on this basis I can only have them do the most rudimentary tests.

It may interest you to know that last year I calculated how much it cost the city for a complete analysis of a cadaver; it came to an average of about \$3. In the old days it cost the city much more to have an expert come in and analyze a case. The Rice case cost the city \$30,000 to prove death due to chloroform. The main object of the toxicological department is a scientific study of all conditions surrounding death; second, an unbiased, clear-cut, and honest testimony. In this connection I would like to call your attention to one of the cases which I had contact with while in this department. We meet dishonest testimony very often, but this is the prize case of my experience. A few years ago two old people were found dead in a hotel in Brooklyn. Investigation showed they were perfectly healthy; they had plenty of money, and they had no reason for suicide. The previous night they had come back from Palm Beach, where they had been on a vacation, went to their hotel rooms, and the next morning they were found dead. The Medical Examiner was called, and he could not explain the deaths, so he ordered the two bodies to the morgue. Being rich people, and two dying at the same time under such conditions, it aroused a great deal of interest, and a lot of doctors were at the autopsy table. As the autopsy was in progress many theories were advanced as to the cause of death. We found one or two plum skins in the stomachs of both of these old people, and one doctor suggested that somebody that had something against these people had with a hypodermic needle

injected some rare Chinese poison into the plums, which these two people ate and hence died. When the autopsy was finished, no cause for death was found. The organs of both were sent to the laboratory, and I worked on these two cases for a long time, but found nothing, with the exception that there was a faint indication that there might have been a faintest trace of cyanide. The stomach showed absolutely none. The brain showed a faint trace. In routine testing one would say there was nothing there, but I put all my attention to the cyanide question. I took some brain material and concentrated it, trying to get a final distillate which was as strong as I could possibly get it, and I repeated several cyanide tests, and did get a definite small trace of cyanide. It happens many times that the pathologists do not send us all the organs. The lungs were not sent in these cases. The lungs were later sent at my request. The stomach showed no cyanide; the brain showed some, the liver showed a very small trace, and I found the lungs did have a trace of cyanide. As soon as I got the first indication of cyanide, I suggested to the authorities to inquire about cyanide fumigation. The hotel management was asked whether any fumigating had occurred in the hotel. Detectives asked one person after another around the hotel, and they all said no, until a chambermaid caught unawares said yes, there was fumigating on such and such a day, and on looking it up, it was found that it was just the morning after these people had arrived. They arrived the night before and the next morning the fumigators had started the fumigation. The management thought the entire building was empty, and these people came back without notice to the management. Nobody knew they were there. No danger signs were put on the outside of the building, still the fumigation was started in the apartment below that occupied by this couple. The fumes entered through crevices around steam pipes, and they evidently died from these fumes. The cyanide got into the organs by way of inhalation. The interesting part starts now. The case came to court, the fumigator having been indicted for manslaughter. I was called to the stand and testified to what I found. On cross-examination, which lasted about six hours, the opposing lawyer tried to upset my testimony by bringing in German books in an effort to show where my statements were all wrong. On translating it was found that he himself had mis-translated. He could not break down my testimony in any way. The defense put two experts on the stand; one was an x-ray man, who acted as a pathologist. The other was a professor of chemistry in one of the technical schools, and he was the so-called expert toxicologist. They told the Court that cyanide is not a poison at all. They claimed to have poured sulphuric acid upon sodium cyanide, and as the fumes of hydrocyanic acid rose, they kept inhaling them, and no fatal results developed. They said no wonder Dr. Gettler found cyanide in the lungs; and in the brain; the lungs contain purins, and the purins are made up of hydrogen, carbon, and nitrogen, and hydrocyanic acid is made up of hydrogen, carbon, and nitrogen; no wonder Dr. Gettler found HCN in the lungs. That is the same thing as if I told you that ice cream is the same as alcohol. Ice cream contains hydrogen, carbon, and oxygen in combination. So does alcohol. The next morning they were on the job, and asked to be put on the stand again. There was one experiment they had forgotten. They had a miniature model made similar to the hotel in which these peo-

ple died. They had two animals, a guinea pig and a white mouse. They especially took animals that were sick; they put them in the upper compartment of this miniature model. In the lower part they put a beaker of potassium cyanide and poured sulphuric acid into it, and they closed the door. The fumes rose to the upper compartment, and the animals went smelling along the cracks, and inhaling the fumes. They did not die, but instead were cured of their original malady. This is the experiment which they forgot. Who could forget so vital an experiment? The District Attorney asked this professor of chemistry if he was a toxicologist. He said, "I know all about poisons." He asked him how many human cadavers he had analyzed for poisons. This was the first case he had ever handled. Finally he asked him to give a definition of pathology, and the professor answered, "Pathology is the science of poisons!" The District Attorney said, "Professor, that answer is just as true as all the other statements you have made on this stand," but this was too deep for the jury. This case serves to show the caliber of some of our expert testimony. One plan to avoid such testimony would be for the Court to appoint one or two or three experts to work up a case, write it up, and have it published in a reputable legal journal. Putting one's work on record would certainly keep experts from stretching the truth.

True poisonings are not the only ones investigated in our office. Not so long ago an aeroplane crashed into a motor boat, killing the occupant of the boat. The police located the aeroplane later on, but the aviator claimed he did not hit the boat. Examining the wreck, faint green streaks were noticed. These specimens were submitted for analysis, in order to determine whether their composition was similar to that of the green paint on the plane. On closer examination I found three little spots about the size of a pinhead, green in color. These I removed and analyzed, as also the green paint from the plane; both had exactly the same composition, being made up of chromium and nickel. That was an important link in connecting plane with boat. Of course I cannot say that the streak of green paint is from that aeroplane, but I can say that the composition of the two, the appearance of the two, and the physical characteristics of the two are the same.

Next let me present an interesting "hit and run" automobile case. The man hit was found dead in the road. The auto was found deserted some distance away. On examination the cross bar between the lamps was found slightly dented, evidently where the man was hit. By means of a lens, small fibers were removed, mounted, and enlarged photos taken. They corresponded exactly with fibers taken from the dead man's coat. I show you here the photos in question. This is another instance where many people would not even think of using a chemical laboratory for anything like that. This was also a very good feature in proving that this was the automobile that did the hitting.

The next thing I wish to bring up is the alcohol question. We have developed in our Department a method wherein we use the alcoholic content of the brain to determine whether a person was intoxicated at the time of death or not. We have classified our alcoholics into four classes, arbitrarily, from one to four plus. Numerically a four plus reaction approximates 0.6 to 0.4 per cent., from 0.4 to 0.25 per cent. is a three plus reaction; from 0.25 to 0.1 is a two plus reaction, and from 0.1 to 0.01 per cent. is a one plus,

and below that is a trace. These results are based on analyses of 6,000 brains. We analyzed these 6,000 cases, investigated the history at the time of death, and we found in each and every case which showed an amount of 0.25 or more that the man was intoxicated. The question is asked, how is it that some people can take a lot of alcohol and get away with it, and others with much less get intoxicated. The explanation is this. A lot of work has been done by German authorities on animals in regard to this personal susceptibility. They concluded it was due to increased oxidizing power toward alcohol in habitués. These animals could stand more alcohol, because they burnt it up faster than those that are more easily affected. If burnt up faster and to a greater degree, it cannot accumulate in the brain as rapidly as in non-habitués, hence these individuals do not get intoxicated as readily. If, however, they take enough alcohol, so that it accumulates above 0.25 per cent., these also become intoxicated.

In this connection there was a very interesting case on Long Island a short time ago. An air pilot with two passengers aboard his plane crashed to the ground, and all three died. The District Attorney of that county submitted the organs to me for analysis. The brain contained 0.42 per cent. alcohol. No other poisons or drugs were found. This amount of alcohol in the brain indicated intoxication at the time of death. This I reported to the District Attorney. Much newspaper publicity was given to this finding. Then followed a lot of dissatisfaction. An air pilot! How could he be intoxicated? Impossible! One newspaper for six successive days published the opinions on this case of six different doctors. These were surgeons, psychiatrists, eye and ear men, but not one a toxicologist. One doctor stated, "What is found in the brain is no indication of drunkenness." Another doctor: "The physiological reaction varies with the individual. This variability applies to alcoholic content of the brain as well as to other organs." Another: "A man may be drunk as a fool in the legs, but clear as a bell in the head!" Another: "I do not think any doctor can tell without having been at the scene at the time to make an examination. Alcohol can produce a condition in which a man may not be drunk, but his muscular coordination be affected." None of these did I answer, but I wrote the District Attorney and told him if anybody came to me and asked me a question in surgery, I would say, "I do not know; it is not in my line." These doctors gave opinions on something about which they knew nothing. I will read to you a letter from a doctor in the home town of this pilot. He states: "I note that you are credited with the statement that this man was very drunk at the time of his death. I am very much surprised that a man should make a statement of this kind. From wide experience in postmortem work I have my doubts as to how you can make this statement. When living here this aviator was a very honest, sober person, and when the unfortunate man cannot defend himself, an accusation of this kind is the worst kind of cowardice." Another article in a newspaper said that the employer of the dead pilot was going to have his chemist analyze the brain. Therefore I kept in a sealed condition one half of the brain. Months elapsed but no chemist arrived.

Our work on chloroform will show how its detection has aided in solving an important case before the courts. A girl was found dead in a doctor's office. The Medical Examiner was called. He or-

dered the body to the morgue for autopsy. Evidence was found that an incomplete abortion had been performed. The organs were sent to me for analysis. I found present a large amount of chloroform, 150 mgs. in the brain. The doctor was questioned. He said that he did not perform an abortion; that somebody else had performed it in some other part of the city. The girl came to him and told him the story, and as she was telling him all about it she died. His defense was that he did not do the abortion. The question was whether a woman in that condition, having that much chloroform in the brain, could walk through the streets, to this doctor's office. From experience of other chloroform cases (about two dozen) where quantitative work was done, the following figures were obtained:

People dying under the influence of chloroform during a minor operation had as an average 120 mgs. of chloroform in the entire brain. This girl had 150 mgs., indicating that she died while anaesthetized.

Let me also present a series of experiments on dogs, which corroborate the view that this girl could not walk with 150 mgs. of chloroform in her brain.

A series of dogs were taken and anaesthetized with chloroform in the usual manner. Two were killed while at the height of anaesthesia. In the next two the chloroform mask was removed and they were allowed to live 10 minutes, the next two 30 minutes, the next two 50 minutes, the next two 75 minutes, and so on. The brains of all the animals were analyzed for chloroform. The results showed a chloroform content of 350 mgs. after 10 minutes; 100 mgs. after 30 minutes, 50 mgs. after 50 minutes, and so a gradual decrease. The chloroform content was calculated to a 1500 gms. brain, the average human brain. All these animals could not walk normally (staggering, hind legs weak), until after 40 minutes. At this time the chloroform content was down to 80 mgs. This indicates that the girl in question, having 150 mgs. in her brain, could not even have started out to go to this doctor's office. In 20 minutes more, the chloroform in the brain of the dogs had dropped to 40 mgs. Twenty minutes would be a reasonable time to allow this girl to reach the office in which she was found dead. We would then expect to find 40 mgs. of chloroform in her brain or less. We actually found 150 mgs. These findings completely broke down the indicted doctor's alibi.

Discussion

DR. CHARLES NORRIS: I appreciate the honor that has been done me in being asked to discuss Dr. Gettler's very interesting paper. I feel very much gratified that I have been asked, because it gives me an opportunity in a public way to convey to you the extent of my appreciation of the ability of Dr. Gettler and his faithfulness to his work. I think that the paper is admirably suited to indicate to you the immense amount of tedious work that Dr. Gettler has done. You can realize the vast importance of doing such work accurately so that the results obtained may be presented in an orderly and legal fashion before the court. I think this is of supreme importance. In this country there have been very few examples of the kind of work which Dr. Gettler has performed, not only in the laboratory, but also in court. I think perhaps the only other man, at least with whom I am thoroughly acquainted, who has done anything like this is Professor Haines in Chicago; that, of course, is admirable and probably as fine a piece of work as has been done by anyone in any country. The results which Dr. Gettler has shown speak very highly for his ability, and I think it may be said without fear of contradiction that the City of New York is to be congratulated on the fact that it has at its command a man of the extraordinary ability of Dr. Gettler. You must understand, as he has briefly indicated, that he has not the assistants at his command that he should have. He has only untrained boys to help him. An attempt is being made by the Academy of Medicine to educate the authorities, namely, the Board of Estimate

and Apportionment, to provide funds which will enable the Department to carry further the work which Dr. Gettler has so admirably begun. It is a very difficult thing to tell a layman who does not understand chemistry, and who does not understand the importance of postmortem work, and who naturally has an antipathy to postmortem work, which is so widespread in this country, and which is so unfortunate, anything about the necessity of such work. The medical profession I think is largely responsible for this dread of postmortems by their failure to train the people, who go to hospitals as well as their own offices, in respect to the supreme importance of permitting autopsies, not only for legitimate scientific purposes, but also for being of real value and benefit to the family of the deceased. I am perhaps wandering a little bit from what I wanted to say, but I thought this would be an excellent opportunity to bring to your attention what we are trying to do. The Academy of Medicine desires that a Medicolegal Institute should be established in the City of New York, and for the very good reason that it is needed for the training of students, and also for the training of men who will make pathology and toxicology their life study. This can only be done with funds. Without financial compensation and without increased laboratory facilities, not only as regards salaries, but also proper equipment, it will be impossible to do this.

The chloroform case which Dr. Gettler has so well brought out is, of course, an extremely interesting one. I tried this afternoon, but was unable to compile the statistics upon chloroform anesthesia fatalities, especially in cases of abortions, for the simple reason that our classifications are not cross-indexed. We classify abortions, but in our medical reports we do not state the character of the abortion, in other words, what anesthesia was used, if any. Anesthetic deaths in a big city like New York are interesting. In the year 1927 there were 38 deaths which we classified as anesthesia deaths following the administration of an anesthetic. In 1928 there were 46. I found in a hurried survey that most of the anesthetic deaths were due to either ether or to novocaine or cocaine. There was one case of a woman 33 years old who died very suddenly preparatory to a tonsillectomy for an abscess of the right tonsil. Dr. Gettler reported that in the brain of this woman there were 150 mg. of chloroform found. Evidently she was septic and she also had some slight visceral lesions, which need not be discussed.

DR. A. V. ST. GEORGE: (by invitation). It is hardly necessary to discuss the paper which Dr. Gettler has so admirably presented this evening, because it is complete in every detail. I think Dr. Gettler has shown the value of his work to the community and particularly to the practising physician in many ways, and I know he could entertain you with a great many more stories concerning the work which he has done. For example, I remember particularly a case of abortion investigated under the old Coroner's system in which postmortem examination by one of the Coroner's physicians disclosed absolutely no mark of instrumentation, but Dr. Gettler found a large amount of chloroform in the brain, proving that this was undoubtedly a "chloroform death." The work which Dr. Gettler has been doing is of great value in many ways. I do not think he touched upon the compensation cases which are referred to the Medical Examiner's Office. There is a large number of cases in which employers are held responsible because a man has been injured or killed, and the blame has been put on the employer because of a defect in the machinery. In a great many of these cases Dr. Gettler has shown that the individual had been intoxicated. I remember one case, in particular, in which a construction superintendent was found dead in the subway. It was claimed that he was entitled to compensation because he presumably was on his way to the bank to draw money with which to pay off the employees. It happened to be a pre-holiday afternoon, and evidently someone had entertained this man very nicely, because Dr. Gettler found a large amount of alcohol in his brain. He probably had lost control over his muscles and dropped in front of the subway train. Cases of this sort emphasize the fact that the routine which Dr. Gettler performs daily is of inestimable value to insurance companies, to employers and to doctors, in addition to aiding in the detection of crime.

DR. E. E. SMITH: I want to assure Dr. Gettler of my personal appreciation of his recital of the vicissitudes of the toxicologist. It is quite in accord with some of the experiences I have had. Not very long ago, when he, I imagine, was entering into the earlier part of his work in determining the amount of alcohol in the brain, I was called on the 'phone and asked if it would be possible for me to appear as an expert in a case and testify that a man whose brain contained 2 per cent. of alcohol was not necessarily intoxicated. I told him I did not think I could take a case of that kind. I want the assurance of Dr. Gettler that I was correct in this conclusion.

Right here, I want to state my hearty and thorough appreciation of the need of proper funds for carrying out the work which Dr. Gettler is so ably conducting. There is nothing that is

more discouraging to good, honest, competent work than the failure to reasonably support that work by proper funds. Furthermore, I think that the City should maintain a department that will reflect credit upon it. The funds that are now allotted to that work fail to do this, so far as facilities are concerned.

There is one question that comes to my mind in regard to alcoholic susceptibility being determined by the amount of alcohol that has escaped oxidation and which is therefore present in the tissues of the brain. I am reminded of what Dr. Biggs used to teach us when he taught *materia medica* years ago. He told us of two internes who when off duty would go out and have a pleasant evening, returning late, and by the next morning would be all right for duty. One of these men would find that his brain was affected so far as his psychic centers were concerned. He could walk all right, but he could not think straight. On the other hand, the other man was perfectly clear in his mind, but his legs would not carry him, and so these two men would lock arms, and between the man that had the clear head and the man that had the steady feet they were able to get back to their destination. I am wondering how Dr. Gettler can reconcile this with the point of view that there is no individual cellular susceptibility in the brain centers.

In regard to Dr. Gettler's suggestion that it is a better plan for the Courts to appoint the medical experts—that is one of the old questions that has come up many times, but we are not always so fortunate as to have an honest and capable man to act as an expert. When experts are appointed by the Court, political favor or an unjustified reputation is apt to enter into the appointment. It becomes a grave question whether the interest of the public is better served by such appointments, or whether it is better served by the selections of the individuals in litigation. Each of these plans has its drawbacks. I am reminded of a case which occurred in one of the States several years ago. The toxicologist in the case is now dead, so I can tell the story without mentioning his name. It was a case of alleged arsenical poisoning, and the toxicologist had examined the stomach and found a condition of ulceration. He also found arsenic present in the stomach. He wrote to the District Attorney that it would be quite impossible to distinguish between a postmortem change and an antemortem ulcer produced by the arsenic. Here the question was whether the arsenic had produced the ulcer or sloughing or whether it had been introduced after death and thus was a postmortem change, and he stated that it was impossible to distinguish between these two conditions. Then the case came to trial and on the witness stand he testified that without any question whatsoever there was this condition of ulceration which indicated an antemortem ingestion of arsenic. On the basis of his testimony the accused was given a life sentence. The man protested his innocence and he continued to protest his innocence with the result that two years afterward his friends employed another lawyer to attempt to re-open the case. It happened that this lawyer was a late partner of the man who had been District Attorney during the original trial, but just at this time the District Attorney had moved into another office. The lawyer retained by the man who had been sentenced, in looking over the desk which the District Attorney had vacated, found in one of the drawers this letter from the toxicologist with the statement that it would be impossible to distinguish whether the condition was postmortem or antemortem. On the basis of this, the case was re-opened, with the result that the toxicologist, on the presentation of this evidence, was most terribly scathed by the Court. The Court record had to be re-written for the permanent record, so severe was the Court's language in expressing his utter contempt for this toxicologist. The toxicologist at the time was unfortunately detained in Europe and was not able to return to this country until after the trial. He was a man who has appeared in many important trials in various States. His methods were incompetent and tricky, and he has been subjected to a good deal of criticism, and yet if you were to make a list of the leading toxicologists in this country, he would be on that list. It becomes a matter of a great deal of concern whether the Court alone should employ the toxicologist, without the privilege of another toxicologist by the other side to present its side of the question. Whether the Courts alone should appoint experts is a very serious question.

JOHN KIRKLAND CLARK, ESQ.: I was somewhat puzzled when I saw you put my name down among four "poison doctors," and I wondered why I was selected as a "poison lawyer." I do not know whether my work as President of the State Board of Examiners in excluding from the bar those mentally unqualified is regarded by some of the lawyers in the State as "poison," but I have searched in vain for any other qualification to discuss the learned paper here to-night. I came with an intense interest in the subject, hoping I might discover some news as to what "individual cellular susceptibility" was to the potency of the refreshment served in some of the speakeasies in town, but apparently the only accurate determination we have on

this subject necessitates the victim's not only "passing away," but never coming back, and that is a little further than most of us want to have the experiment carried!

As I look back over a long and varied career, having some contact with criminal cases, the only case which I can recall which came at all close to the subject under discussion was one of the most fascinating and interesting cases of which I have ever known. I suppose it might be libellous for me to mention it by name because of the final disposition of the case, but I thought that possibly, after all this highly technical and instructive disquisition by the learned members of the medical profession, something which had a touch of romance to it, and was more startling in some of its particulars than any of these anonymous cases we have discussed here this evening, might be a source of some entertainment to you.

I was in a unique position some few years ago, being called in for advice by the family of a young woman who was the recipient of the affections of a very extraordinary individual,—a man of 35 or 40 who had had some college training, was a successful business man here in New York, and had been married once or twice before the marriage which then held him and interfered with his carrying out the plans he would have liked to carry out with the young woman whose family asked me to advise her. He had become so devoted to this young woman (though he continued in the married state with his spouse, who had enabled him to make the business connection that he had) that things became intolerable, and after four or five years of a passionate love affair with this young woman, during which period he had persuaded her he was trying to procure a divorce, which never came to a head, he assured her his wife had suffered a serious automobile accident, and the divorce proceedings were held off until the end came; but the end did not seem to come.

Taking it from the other side, we find this very respectable and very fine woman who was his wife a subject of peculiar interest to her family physician. She seemed to be in excellent health, and then suddenly she suffered from severe stomach trouble and a trained nurse would be called in to attend her, and she was shortly thereafter restored to health, and then she again began to suffer from stomach trouble, and the doctor would be called again. This happened two or three times, until the family physician arrived at the conclusion that there was something outside of the ordinary working of the digestive system that was responsible, and as a result, much against her will, detectives were put on the case.

It appeared that the devoted husband was so attentive to his beloved spouse that he used to prepare food for her, when she was not feeling well. He was so solicitous for her welfare that he thought it was unwise for her to use lump sugar in her coffee, as it was not so pure as granulated sugar; the coffee was always poured in after the cream and sugar were in her cup. Everything went well until one day the coffee was poured in before the cream, and a peculiar white powder was found floating at the top of the coffee, and in the course of time it was proved that the sugar in the bowl was heavily mixed with arsenic. Even this was not enough to satisfy his quest for adventure, for through the connections he had (he was a member of some standing in the community) he had obtained leave to conduct experiments with germs which were furnished him from the Willard Parker Hospital; he had germs of typhoid fever and one other disease. When it was discovered that, under an assumed name, he was getting this supply of germs, he was traced there, and after a long wait, while the State Police were assigned to the case, one of them, in the guise of an orderly, supervised the delivery of a couple of tubes of germs to him. When they were delivered to him the message was flashed to one of the detectives at the house, and soon after the husband was observed preparing bread and milk for his wife. Another bowl of bread and milk was substituted for the one he had prepared, and cultures were made from the bowl which he had prepared and injected into a rabbit or a white rat, which developed clear evidences of the infection which had been introduced through the germs.

While this work was going on the man went away for a little trip with the young woman in question, and on his return he was arrested and charged with attempted murder. It was really one of the most fascinating bits of detective work, tintured, as such cases often are, with romance. The girl was an exceedingly fine and charming young woman of ability, a school teacher, who had gained the affection of all her students, and the high regard of her associates and those who employed her. She was heartbroken, strangely enough not so much because of what the man did in attempting murder, as in discovering the falsity of his representations that he was divorcing his wife.

As I say, unfortunately, it is not possible to discuss the case by name because of the developments which occurred. The District Attorney prepared the case for trial; he examined jurors; counsel for the defense indicated in the examination

that he might put in a plea of insanity as a defense, so the District Attorney asked leave of the Court to have experts examine the defendant for the Court. All these experts ruled that the defendant was insane, and he was thereupon committed to Matteawan. His wife, who was more or less unwilling in her position as prosecutor because she was devoted to him in spite of his conduct, was a loyal practitioner of Christian Science, and while he was in Matteawan one of those marvellous cures was effected, and when he got out, the wife had conveniently removed herself from the State, and in the course of six or eight months a motion was made for the dismissal of the indictment; and the last I heard of them, the husband and wife were re-united and living happily, thus showing how the absence of a toxicologist in this particular case frustrated the administration of justice.

H. W. NEALL, M.D.: I have been a member of this society for many years, but this is the first meeting I have attended. When I received the pamphlet with Dr. Gettler's and Dr. Norris's names on it, I made up my mind to journey in from the far Eastern section of the city and spend an evening in this great medical building.

I, too, have enjoyed Dr. Gettler's paper and his manner of presenting it. It has been a story telling fête.

I have a story to tell you about chloroform, especially in relation to Dr. Gettler's office. It is in connection with one of the greatest homicide cases we have had in this country, namely, the Snyder case. When I visited the Snyder home early on the morning of the murder, I found the deceased lying in bed, face downward, with the bedclothes over his head. When I removed the bedclothes, I noticed a picture wire tied tightly around his neck. There was blood on the face and scalp from two lacerated wounds on the right side of the scalp. On further investigation some waste, ordinary machine waste, was noticed in and around his nose and mouth. The presence of this material seemed peculiar to me; it had no odor, but suggested in itself that some drug had been used.

To make a long story short, a trace of chloroform was found in the brain by Dr. Gettler, and the chloroform bottle was eventually located and played its part in the trial.

At first, before the analysis, there was a question as to the cause of death, strangulation or poisoning. Dr. Gettler's report completed the medical side of the case, as the findings were verified by a confession of the defendants. The deceased was struck by a sashweight while asleep, which resulted in unconsciousness; he was then turned over, the chloroform applied to the nose and mouth on the waste, and the picture wire tied tightly around the neck, causing asphyxia, from which he died.

L. T. LEWALD, M.D.: I would like to report here a cyanide case very similar to that reported by Dr. Gettler, which occurred in Washington about 1912. A doctor and his wife were there from the west, and had gone to a hotel with their baby. They left the baby asleep and went to a theater. When they returned the baby was dead. The circumstances were very similar to the case which Dr. Gettler so carefully worked out, namely cyanide fumigation had been undertaken in the room below, and the fumes had gone up through the opening around the steam pipe, and killed the baby. I would like to ask Dr. Gettler if any action has been taken to counteract this occurrence in the future, such as using some odorous gas to be added to the cyanide, such as they put in illuminating gas so that accidental leaks will be discovered and thus prevent fatalities.

HARRY G. GOLDMAN, M.D.: (by invitation): I am prompted by Dr. Norris's remarks to comment on the shortage of trained toxicologists. Dr. Norris is concerned over the paucity of young men desirous of entering this field of medicine. Now, if we could project ourselves back to the days of the Borgias in Italy, when it seemed to be the indoor sport to introduce lethal poisons in the cups of your guests, or if we could bring back the olden days of Paris of the 15th Century, when all sudden deaths were attributed to poison and the City of Paris was almost depopulated and the only survivors were those who fled to England, I could very well understand the reasons for young men to enter a field which held out for them much success in the specialty of Toxicology.

I look with admiration upon Dr. Gettler for the fortitude and the courage he has shown in choosing this specialty which offers such little reward. I do not believe that the young man of today is willing to starve in the attic for dear old Science. I venture to say that unless Dr. Gettler supplements his income from outside sources, his emoluments do not reach the salary of a Commissioner or Deputy Commissioner, whose only qualification for the job is a partisan loyalty to a dominant party. However, inasmuch as this is a scientific session, I shall not pursue this subject further.

Dr. Gettler's work in chloroform has interested me. I would like to ask him whether he has done analogous research with ethyl chloride and ether, or if he knows whether others have reported their work on the last named anaesthetic drugs.

E. W. KELLY, M.D.: Dr. Smith's story reminds me that the psychiatrist might say a word relative to the effect of alcohol on the brain. You are all familiar with the old Saturday night drunk. They are present by the thousands, and yet in the State hospitals and private institutions of this State we have 10 to 15 per cent of alcoholic psychoses. The census is something like 48,000 today. Why is it, if there is no individual cellular susceptibility, that all these drunkards do not land in our hospitals? We examine the brain grossly, and so far as we can tell, there is very little structural change. I know of no work having been done on a complete analysis of the brain, but in time some of us will come upon something which will give us the key to this solution.

DR. GETTLER (closing the discussion): Dr. St. George brought out that we are trying to show in compensation cases that the individual is intoxicated at the time of the accident, automobile or industrial or otherwise. We get just as many cases the other way around, where the insurance company claims the person was intoxicated and we find absolutely no alcohol in the brain, and therefore the testimony is, not intoxicated.

Dr. Smith, I will be only too glad if you will try out the method. It has been published, and we will be grateful to anyone who will try it out. I have also published a method of how to detect drowning. Sometimes we may get a case found in the water, and it may not be a drowning case. It may be homicide of some other kind, and then the body thrown into the river after death. We always lacked a method to determine whether the person was drowned or not. I have such a method and I have published it, and have received letters from Europe and Australia showing that they have tried it out and found it satisfactory.

As to Dr. Bigg's story, you must remember that it is a story, after all. I think it was possible that one of the two men was able to walk a little better than the other, and the second one had a little clearer head, but I think if you had taken the man who was supposed to walk straight, and had let him walk alone, you would have noticed that his equilibrium was disturbed also.

As to experts being appointed by the Court, what I had in mind was this: Take the expert that you mentioned. If his work and his opinions were published and everybody could read them, including all the medical and legal professions, and if his findings and opinions were scrutinized, that would put a stop to testimony of that kind. I think if such reports were published and read, as are scientific publications, it would help.

Mr. Clark asked how we can tell about alcohol before we die. We are working on a method now. We are now analyzing and comparing the alcohol content of the spinal fluid and the blood in living patients, and the brain in the deceased, trying to see a relation between the spinal fluid and the brain and the blood. In living people it is very easy to draw some blood for analysis, and it is also possible to obtain a spinal tap, but I do not think Mr. Clark would like the spinal tap on himself.

Dr. Neall asks about the chloroform in the brain of Ruth Snyder's husband. We have results on this case also.

Another thing which Mr. Clark mentioned in his Westchester case was the absence of the toxicologist. He was not absent. I was the man. The real wife came to my laboratory. Her husband not only tried to put arsenic in the coffee, but even in figs and dates, and I worked the case up, but the rest of it you know.

I do not know the case which Dr. LeWald mentioned in Washington. I graduated in 1912, and it was before my time.

We have no good method at the present time for the determination of ether. There are no color reactions for ether. It would be possible to detect by physical constants if we could get the ether out in pure form, but when you get a trace of ether in 300 c.c. of distillate, we have no test by which it can be detected.

Lastly, about why these drunks do not land in the hospitals, I cannot answer why they do not. They seem to thrive in the streets.

Contact Committee on Drugs Reports on Analysis of Ampuls

Methods for analysis of calcium chloride, dextrose and methenamine in ampuls are recommended in the eighth report of the joint contact committee of the American Drug Manufacturers Association and the American Pharmaceutical Association, just published by the Food and Drug Administration, U. S. Department of Agriculture.

The committee has recommended tolerances for dextrose and for methenamine ampuls but no tolerance has as yet been suggested for calcium chloride ampuls.

Copies of the complete report may be obtained by writing the Food and Drug Administration, U. S. Department of Agriculture, Washington, D. C.

N. Y. EYE AND EAR INFIRMARY

In Olden Days

Frank Leslie's Illustrated Newspaper of April 10, 1875, from which the wood cut on the next page is reproduced, gives the following interesting description of the Infirmary at that date and the low fees charged.

The New York Eye and Ear Infirmary, situated on the corner of Second Avenue and Thirteenth Street, is one of the most commendable of the public charities of this city. It was founded in 1820 by a number of philanthropical gentlemen, among the most prominent of whom was the late Dr. Edward Delafield. The institution is supported by voluntary subscriptions, and has seldom received aid from the State or Municipal Government. It was the pioneer, in this country, in the treatment of the diseases to which it is specially devoted, and its ministrations have been experienced by nearly one hundred and eighty-six thousand poor sufferers. During the past year ten thousand five hundred have found relief at the hands of its surgical staff.

The Infirmary is open daily for the reception of patients suffering with diseases of the eye, ear, nose and throat. No charge is made for treatment, and no forms are necessary to be gone through to obtain relief. The doors are always open to the afflicted. Dr. W. Oliver Moore is the resident surgeon, and the staff of surgeons embraces some twenty-five gentlemen eminent in their profession. Every facility is afforded for a thorough and scientific treatment of all diseases specially treated at this institution. There are darkened rooms specially adapted for operations, and furnished with the most approved instruments and apparatus. The building also contains clean and comfortable wards for the accommodation of patients who are compelled to remain in the house for treatment. Patients who are able to pay are charged the nominal sum of five dollars per week for board, but the majority are cared for without money and without price.

The department for the treatment of diseases of the nose and throat was added in 1873, owing to the fact of many diseases of the eye and ear taking their origin from trouble in the nostrils and throat.

Many are treated daily in the principal operating-room, of which we give a sketch. The average daily attendance is about one hundred and fifty. The scene during the hours devoted to the reception of patients is animated and interesting. Patients of all ages and stages of suffering are found here. Helpless infants, decrepit old men, poor seamstresses, who have injured their vision stitching and sewing for a paltry pittance, men whose dissipation has brought disease of the eyes, student with optical weakened nerves by midnight study, unfortunate workers at certain trades injurious to eyesight, and others, gather here for relief.

Public Health Exposition

Brooklyn, New York City, is to hold a Brooklyn Public Health Exposition during the week of next October 20.

The Exposition is being held under the sanction and endorsement of the Medical Society of the County of Kings, and the Second District Dental Society.

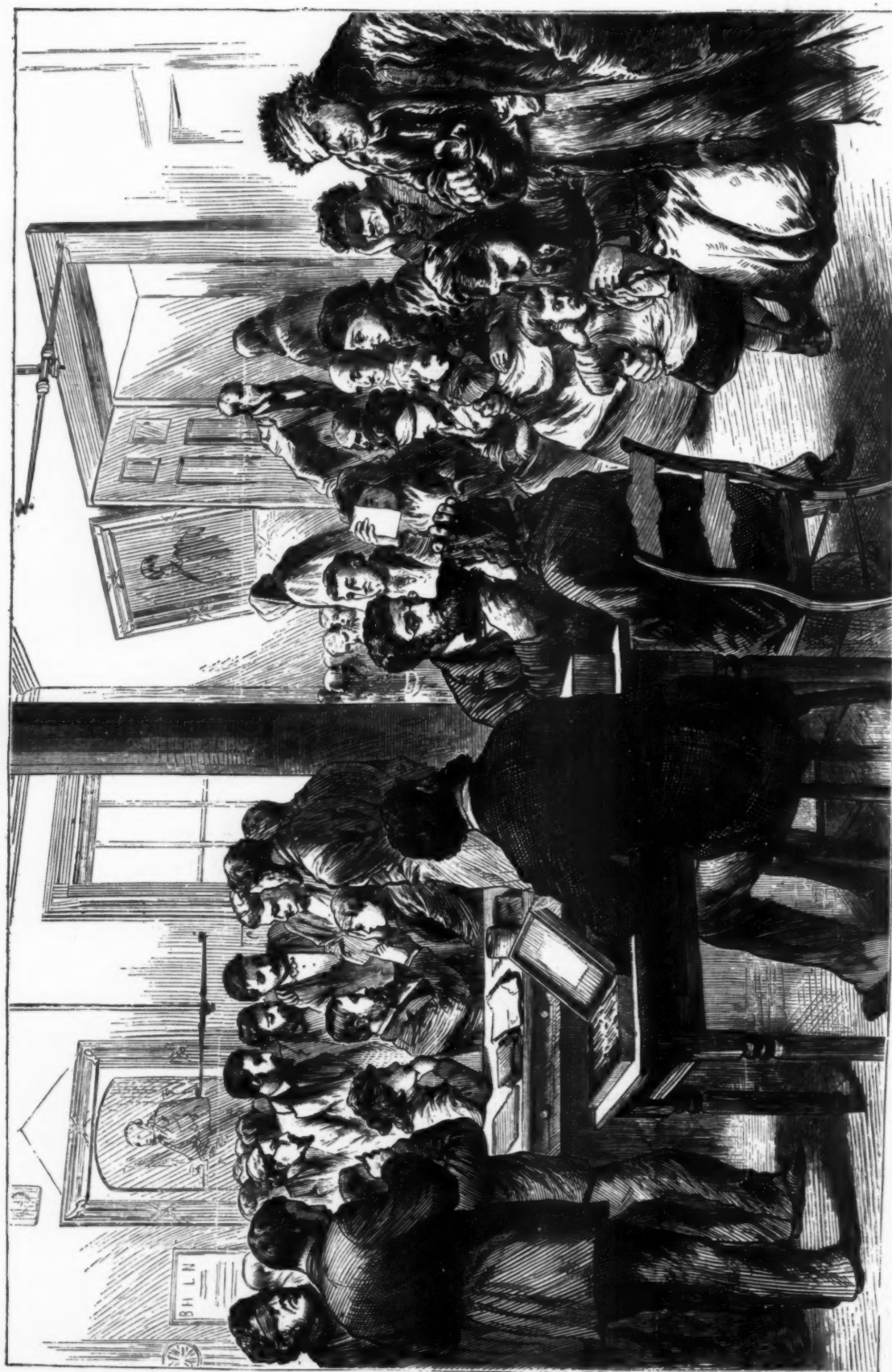
Shirley W. Wynne, M.D., Health Commissioner of New York City, Hon. Henry Hesterberg, Borough President, Luther F. Warren, M.D., President of the Medical Society of the County of Kings, and George Crawford Douglass, D.D.S., President of the Second District Society are Honorary Chairmen of the Exposition.

Headquarters for the show, which is to be held in the 23rd Regiment Armory, have been opened in the Brooklyn Chamber of Commerce Building, 66 Court Street.

In connection with the Exposition President Hesterberg has issued a proclamation setting aside the week of the show as Public Health Week. There will be broadcast one or more of the larger radio stations messages from the Health Commissioner, Commissioner of Sanitation and other speakers equally as well known to the general public.

Many concerns are taking space in the Exposition. These include lines, apropos of the aims of the exhibits, and number drugs and chemicals, medicines, orthopedic appliances, exercising appliances, X-Ray apparatus, first-aid, medicinal and toilet soaps, dental supplies, dental appliances and equipment, health foods, Health Resorts, Sick-Room supplies, Nurses Equipment, Professional Office Equipment and Hospital Supplies.

There are 4,000 physicians, 3,000 dentists and 2,750 retail druggists in Brooklyn. For these the Exposition will be open from 11 A. M. to 1 P. M., daily so manufacturers may provide demonstrations not offered through the usual channels of merchandising. Factory experts and technicians will through this have an opportunity to meet the profession.



A SCENE IN THE NEW YORK EYE AND EAR INFIRMARY, SECOND AVENUE AND THIRTEENTH STREET, DURING THE HOURS FOR THE RECEPTION OF PATIENTS
 (See comment on page 251)
 Reproduced from Frank Leslie's Illustrated Newspaper, April 19, 1875

Medical Times

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OF

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Now It Can Be Told

An extraordinary frankness is now characterizing the profession's admission of the economic impasse. The use of the term "siege" by Dr. Malcolm L. Harris in his A. M. A. address at Detroit exactly defines the situation: "It is unwise to put this matter off from year to year while the siege of medicine is drawing its lines tighter and tighter."

The exploitation of the profession by hospitals, clinics and dispensaries (the industrial machine's reconditioning stations) has reached a pass that is both absurd and outrageous. Intelligent and informed observers more or less affiliated with the profession, as, for example, social workers, say frankly that they are most curious as to how much longer the doctors can stand the racket; it arouses their sportsmanship, so to speak.

The dullest practitioner now realizes his plight and the brightest is thinking hard, and, we hope, constructively.

Is the so-called commercialism of some practitioners nothing but a natural and inevitable effort to buck ridiculous conditions? Is it not the conditions that should be changed? Those who merely curse these offenders are either stupid or hypocritical. Is a man anything less than a marvel who can to-day function with complete honesty against the competition in New York City alone

of 818 clinics manned by gentlemen who, to put it in parliamentary form, appear to be above the operation of economic laws?

It is a severe test to which we are put—a test of intelligence and courage. Our intelligence should enable us to identify the enemy and our courage should prompt unequivocal speech and action. While the situation does not call for a Hildebrand, it does demand a pretty high order of character and intellect on the part of the whole medical group. Lacking this, we must capitulate abjectly and meet the most squalid terms.

One of those squalid terms will be compulsory health insurance, which industrial feudalists are determined to impose upon us because enslavement of the profession is an essential element in their program, if it is to succeed overwhelmingly.

Those who continue, in present circumstances, to submit to exploitation, are traitors, for they are aiding and abetting the super-Babbitts who are sponsoring the new feudalism.

Even greater frankness will become necessary as the besiegers close in upon us. A radical rôle is being forced upon us to which the naturally conservative will have to become accustomed.

Of course, those who regard the complete industrialization of society as akin to the millenium and as something to which we should be compelled to adjust at all points will be disposed to regard our views indulgently—as merely emanating from doomed die-hards. Meantime, they know that big-business is selling all sorts of unneeded luxuries to the people on the installment plan, further insuring the starvation of the recalcitrant doctors.

We face terrific forces; can we withstand them?

The Heated Term

Those of us who were in hospital work years ago (and still are) will recall the disastrous effects of alcohol when the thermometer was about 80°. Men working out of doors and women in laundries dropped like flies and the columns of the daily press were filled with the names of the dead, as they used to be in the Civil War.

When on duty at old Bellevue, we remember how the medical wards and halls were crowded with cots and ice was at a premium; nevertheless, we pulled a lot of the patients through with our crude treatment. The cause was evident. When already overheated, the foolish victims, instead of drinking water, invariably sent out to the nearest saloon for a can of beer which only added fuel to the flame. It "got" them every time. No stronger argument for temperance was needed. Operating rooms were veritable hot houses and perspiration dropped into the peritoneal cavity in streams. It must have been free from deadly germs, or no patient would have survived. It was the surgeon who wilted.

In this connection we recall a march across the State of Montana thirty years ago in mid August, when we had to round up enlisted men from the dives in Helena the night before we left that town. On the first day's march they dropped out by dozens. We used to haul them to the side of the road, throw a bucket of water over them and leave them to be picked up by the ambulances.

They all rejoined the command (the old Seventh Infantry), but it was a week before the rum was stewed out of them and they were again husky soldiers. And the heat! It was a saying in the army that Montana was "half a mile from hell at noon and a quarter of a mile from the North Pole at night." How great the difference now in the army and in civil life!

During the hottest days only half a dozen cases of heat prostration are reported in the press in this great city of seven millions (!) and some of these are really due to cardiac complications. Another argument in favor of temperance.

Being strongly in favor of modification of the Volstead Law, as opposed to fanaticism, we unite with our opponents in thanking God that the saloon never again will be tolerated by our people, strongly opposed as Americans are to being forced to follow the wishes of the minority, who lose sight of the fact that we all resent dictation as to the rights of the individual.

The man on the street now *knows* that alcohol in excess is poison in hot weather and that if he drinks he is taking chances.

While D. T. seems to be rare and the "hob nail liver" is less familiar than formerly, the damaged heart is still with us and it resents intemperance, whether in the speakeasy, or on the golf links.

Doctors can only give advice and incidentally set a good example to the weaker brethren, only we don't. Men (and women) pride themselves on possessing the gift of eternal youth after three score, but their pride is apt to be lowered when they find that they are not immortal. "Platitudes," say readers of our former President's daily advice in the "Herald Tribune." So may be said of this sermonette. Let it go at that. All the same "temperance is next to Godliness."—H. C. C.

A New Diphtheria Approach

The paper of Doctor Brancato, in this issue, suggests novel tactics in the prophylactic battle against diphtheria. Make the Schick-test technic part of our routine prenatal and postnatal programs. Detect and protect susceptible mothers and the progeny will be safeguarded neonatally and postnatally.

The adoption of these measures will move us very far ahead of possible neonatal or postnatal infection and they may, indeed, be indispensable to the complete success of our efforts to eradicate diphtheria. They represent the same kind of progress as was registered when what used to be called incipient tuberculosis was demonstrated to belong in the category of advanced disease and early diagnosis was moved to a point approximating reality.

We must begin to take diphtheria into practical antepartum account.

Sir Arthur Conan Doyle (1859-1930)

That lovable, gifted, imaginative Celt, Sir Arthur Conan Doyle, not being given to the conventional religious or ethylic modes of intoxication, yielded himself to the lure of the spirit world. While he called it psychical research, it appears to have been largely concerned with the supernatural.

Men of science should approach this field without lugging in supernatural implications. There are psychic forces of great potency that are still mysteries to us—no educated person doubts this—and their better understanding would be furthered more effectively by the scientific approach. Where supernatural fantasies taint the approach a legitimate field of study is discredited just as definitely as happens when out-and-out charlatans exploit this subject.

Our spiritualistically inclined—mostly aged—men of science seem overwhelmed by their emotional necessities, and instead of clearing up psychic mysteries only intensify them. Their pseudo-scientific patter serves merely to disguise their abject emotional status. Thus Sir Arthur made a brave defensive gesture, because he was

an educated man. But there was no excuse whatever for a man of his scientific training to leave in his writings and in his talk even the implication that there might be a supernatural significance in the phenomena known as mediumistic "communications." We know, of course, how far he went beyond mere implications.

It may seem a hard saying at this time, but Sir Arthur, stripped of his science and his education, was not very far removed from the superstitious type of Celt who lived in the tenth century before the Christian era.

But his personality was so charming that it was impossible not to forgive him, and for the stories that he wrote we have been deeply indebted along with the rest of the world. A great writer, a great patriot, a shining ornament of the medical profession.

And that longing for the dear boy dead in Flanders knew no bounds or checks.

Prohibition

Someone has said that "a fanatic is a reformed rake." If so, there must be a lot of them uncaged at the present time.

Having cast our vote in the poll of the *Literary Digest*, we view with comparative indifference the deductions therefrom.

Our own opinion was crystallized long since. Every physician knows from experience that a brain fuddled with alcohol has no place in his serious business.

But, he is *not* a fanatic. His entire training, from student to mature practitioner, is in the direction of conservatism. To him temperance is the keynote to his own success.

The Volstead law to him is an abomination and we doubt not that doctors have voted generally for its modification. "Wot t' 'ell!" Are we to submit to the dictation of a politician—or pseudo-reformer—as to when our patients need alcohol and how much? It is too funny. As well invoke the aid of the courts to determine when they have enough pain to justify the administration of a hypodermic.

"Words, words," said the melancholy Dane when asked what course of reading he was pursuing. Truly we are afflicted with them in this age of progress. Oh! for more thought and less verbal expression.—H. C. C.

Of Courtesies

We are wont to scoff at the precise manners of our predecessors and to accuse them of hypocrisy, because they covered up certain delicate subjects that are now discussed freely by our young people. Current literature favors a searching analysis of the inner lives of men and women whom we used to place on pedestals above the common herd. No names were then mentioned, but their private correspondence is now open to every reader, who smiles at their stilted phrases and pities their narrow lives.

But "there were giants in those days," certainly with the pen, who cherished deep convictions with regard to honor and respect for women. Recall the words of Tallemand, when he saw a light burning in Alexander Hamilton's study long after midnight and marveled that one so famous continued to toil with brain and pen harder than in his wonderful youth.

Now the "busy" man relegates personal, as well as business, letters to his stenographer, and is in no danger of developing writer's cramp.

After all, what is courtesy, if not a proper regard for the feelings of others?

We have no patience with the pessimistic thunders of press and pulpit against our boys and girls. They are not all going to the devil, in spite of their unconven-

tional attitude, but are really improving in many ways. Amidst the pushing and crowding of the subway in rush hours, how often one hears from them the magic word "pardon," or (to be real English) "sorry," which covers a multitude of sins.

Our own profession might well renew the old-fashioned customs of our grandfathers with regard to little medical courtesies—not to speak of ethics—when letters were answered promptly, patients were not common property, and we sought other rewards for our work than money alone.

There is something wrong with the "atmosphere" of this wonderful city, in which we feel such pride, and it is not due to smoke and gasoline alone.

We have lost our perspective and "the ancient landmark which thy (our) fathers have set" has been far removed.—H. C. C.

Edward Preble

Doctor Edward Preble, for many years affiliated with the *MEDICAL TIMES* as a literary research worker, has ended, at the age of seventy-five, a notable life as practitioner, teacher and scholar. He was a descendant of Commodore Preble of 1812 fame. After graduation from Bowdoin Medical School in 1878 (!), he practised for a time in Portland, Maine. For many years he was a member of the faculty of the old Wooster Medical College, finally establishing himself in New York in 1900. An amazingly accomplished specialist in literary research, no impairment of his faculties was discernible in the last months of his life by any of the exacting publishers of authoritative works who depended so greatly upon his scholarship. Doctor Preble's personal and professional standards were those of the great tradition, which is praise enough for any man in these days when character and tone sometimes seem almost legendary.

"No Time"

One hears this expression on every lip nowadays, from the hall-boy to the head of a corporation. Watch the hurrying crowds on Fourteenth and Forty-second Streets, or walk past old Trinity churchyard at the noon hour and note the expressions on every face. It is the same story.

It is in the very air, this constant rushing to and fro. Try to make an appointment with a so-called "big" man down town, and you are referred to his secretary, or her assistant, who coldly informs you that he is "in conference," often on the golf links. We return to our quiet study, ponder over the advice of philosophers, ancient and modern, and feel abashed at our own laziness in this busy world.

Our profession raises the slogan "No Time," especially when we seek a consultation with a specialist during his week-end holiday, and we wonder how we ever managed to visit three or four hospitals daily, to lecture at a medical school, and incidentally to attend to an extensive practice without the aid of a secretary or understudy. How did we ever find time for study, writing and editorial work, to keep in touch with family and friends, and to acquire outward, if not inward, serenity?

We were woefully lacking in system, say our modern critics. The same criticism was directed against Grover Cleveland, because he laboriously gave his personal attention to the minutiae of his high office when President.

The only restful spot now in this great city is in church, especially at funerals, where the silent sleeper

ought to be grateful for the floral tributes and the presence of old friends whom he has met rarely in life. Why indulge in the usual platitudes which issue from press and pulpit? Why wonder that the overworked heart gives out in this period of storm and stress in the prime of life?

Whether modernist or fundamentalist, humanist or mystic, we must recall the words of an old book: "While thy servant was busy here and there he was gone."—H. C. C.

Practical Hygiene

New Yorkers are funny people. We perspire and cuss during a week of moderate heat, appearing suddenly in May, our discomfort increased by the discouraging weather reports in the daily press. But we would not for the world discard waistcoats, or wear straw hats, before the orthodox day.

To those who accept the view that the gulf stream is gradually approaching our coast, or lean to the more alarming theory that our planet is only a thin shell, beneath which rages a consuming fire that is a foretaste of the ancient hell of Dante and the fundamentalists, the scientists' hint that this may one day become a sub-tropical country should hold much interest.

If so, why not prepare for the inevitable and learn to go as thinly clad and to take life as easy as men do in the tropics?

Walk down Wall Street and lower Broadway at the noon hour and find the answer.

The ladies, as usual, set us an example by discarding superfluous clothing, though they do continue to wear their stuffy skull-caps and guard against sudden climatic changes by donning furs (!).

Why has the mortality from heart disease assumed such proportions, especially among men in the prime of life? Again Wall Street furnishes a reply to this question.

Does it pay to be cut down just at the time when one is in a financial position to take it easier? But, we are funny, if that can be regarded from a humorous standpoint.—H. C. C.

Miscellany

"Poison Liquor"

Every few days the newspapers carry stories regarding someone who has died from what they call "poison liquor." They are circulated widely by the dry in order to frighten thirsty souls, and they are just as assiduously used by the wets in order to discredit Prohibition.

The public has accepted these stories pretty generally as being corrected, and some physicians appear to believe that these deaths are due to poison in the liquor.

According to available statistics, the number of deaths in the United States from liquor last year amounted to about 4,700. It is larger than the death-rate from many minor diseases. Its annual toll is more than half as great as from typhoid fever, and two-thirds as high as from diphtheria. It would seem that this problem merits some attention on the part of the medical profession.

We accordingly ask ourselves, What is the poison in "poison liquor"?

I have analyzed quite a number of samples of liquor which have caused death or have produced toxic symptoms. Moreover, there are plenty of other figures avail-

able. Analyses show that present-day illicit liquor may be divided into three classes: first, liquor that is imported into this country; second, liquor made in this country under rather crude conditions; and third, industrial alcohol, partly denatured and diverted to beverage use. Let us see what poison could be present in each of these classes.

First, the imported liquor. It is made under approved conditions, aged properly, and, therefore, should contain no poison. But that so-called "good liquor" can kill if taken in sufficient quantity is well known.

The second class is the so-called "moonshine" liquor. It may contain poisons from the original mash, which would not be present under standard methods of manufacture. There are two such poisons, fusel oil and acetaldehyde. Long before the drinker would get a fatal dose of fusel oil he would be killed by the ethyl alcohol. Acetaldehyde presents a somewhat similar case.

Of the three classes of bootleg liquor, that which is made from partially denatured alcohol presents the most complicated situation. There are two kinds of denatured alcohol. The first one is termed completely denatured, and can be purchased at any filling station or paint store. It contains wood alcohol together with some kerosene. However, the fact seems to be that at the present time very little bootleg liquor contains any methyl alcohol.

The bootleggers are now afraid of it. Government statistics show that for every person who dies of methyl or denatured alcohol about twenty die from liquor containing no methyl alcohol.

The second class of denatured alcohol is partially denatured. Each particular industry requiring alcohol may have its alcohol denatured in a certain way suitable for its own manufacturing processes, and at the present time the list of formulas for specially denatured alcohol numbers about fifty, employing for this purpose some eighty chemicals, all the way from carbolic acid and nicotin to arnica and oil of cloves. Most of the chemicals used as special denaturants are removed easily by distillation, so that few of them actually get into illicit liquor. Furthermore, a consumer drinking them without purification at all will be killed by the ethyl alcohol present before he gets a fatal dose of the denaturant.

By elimination we can arrive at only one conclusion, and it is that ethyl alcohol is about the only substance which can account for these deaths.

If these deaths are due to ethyl alcohol, then victims should have in their bodies at the time of death the concentration of ethyl alcohol which is known to kill. This is exactly what has been found. The coroner's chemists of New York and Chicago have each published a large number of analyses in cases of this sort, and their figures show that in practically every sudden death from liquor the body of the victim contained enough ethyl alcohol to account for his demise. My own experience is entirely in accord with this view.

At this point you would perhaps like to ask the following question: Granting that ethyl alcohol will produce death in some cases, still, why is it that there has been such an increase in deaths from liquor since Prohibition? The answer is that there were actually more deaths from liquor in the "good old days" before Prohibition.

The other day the newspapers stated that 30,000 people had died from alcoholism in the ten years since Prohibition. That is probably about correct, but had they taken the trouble to examine the similar ten-year period preceding Prohibition, they would have found almost double that number of liquor deaths.

Since most of the present-day American liquor is

"hard liquor," the surprising thing is that there are not more deaths from it.

When we consider all available evidence, we must conclude that the poison in "poison liquor" is usually ethyl alcohol, the very thing that gives the "kick" to the liquor. It would seem that so-called "good liquor" becomes "poison liquor" if the concentration in the consumer exceeds five or six parts per thousand.—R. N. Harger, M.D., in the *Journal of the Indiana State Medical Association*.

One Man's Creed

Whether or not a single human
There is a joy of life
That comes to those
Who serve.
It is not in the recognition
Of those who profit
But in the knowledge
Of him who has striven
That he has achieved.
'Tis the reward of him, who
Impressed with his duty
In a given path,
Whether or not a single human
Or a whole world of people
Applaud or condemn,
If but he and God know.
And that knowledge
Affords a balm
That soothes and gives joy
To him who thus serves.
I would not give a fillip
For one who does not act
And live with thought
Of his fellow.
What finer sense
Than that which buries self
So that another may gain
E'en tho it be
But a figment
Of happiness.
And yet such a service
Is but a species
Of selfishness
Since it warms the cockles
Of one's own heart
The whilst
Making another's path
Roseate.
Give me men of calibre
Such as this
And world contentment
Will glint
In the offing.

—MAURICE J. LEWIS, M.D.

Scientific Research and Judgment

Occasionally a field of human activity undergoes a transition, and changes from one in which the issues are purely mental to one in which they are objective in the scientific sense. Such was the case when cosmology ceased to be religion and became astronomy. When this took place an entire set of issues earlier to be answered by human judgment disappeared in thin air, and new issues, to be solved by scientific observation, took their place. No thinking person will deny that this was a great social advance. Medicine is undergoing the same transition, business is influenced, and education is touched. We should encourage the movement, but meanwhile it would be foolish to deny that there are wide, important, intimate and enjoyable phases of our lives in which mental appraisals rule.—Kelley, T. L.: *Scientific Method*, Ohio State University Press, 1929, p. 39.

The Physician's Library

Nervous and Mental Diseases. Editor: Peter Bassoe, M.D., Chicago, The Year Book Publishers. 1929. Pp. 440. Price, \$2.25.

A comprehensive hand-book of nervous and mental diseases. Contains many new and interesting diagnostic phenomena. The rationale of the dehydration treatment in epilepsy scientifically presented. Encephalography, ventriculography, and iodography described in full. Many pages allotted to "other forms of encephalitis". Fever therapy other than malaria in neuro-syphilis discussed. Twenty-three pages given to brain tumor. Spinal cord, basal ganglia, and peripheral nerves exhaustively treated. Forty pages devoted to the sympathetic nervous system, including the possibilities of sympathectomy in Raynauds disease, thromboangiitis obliterans, chronic arthritis, angina pectoris, exophthalmic goiter, etc. Forty-five pages on the endocrines wherein is given the logic for the removal of the adrenal gland in hyperthyroidism as done by Crile.

Under mental diseases are taken up general considerations (e. g. the application of psychiatry in hospitals, schools and colleges, etc.), legal psychiatry, psychoanalysis, psychoneuroses, schizophrenia, toxic psychoses and mental deficiencies. A book worthy of every neurologist's library.

Nursing and Diseases of Sick Children. Edited by Alan Moncrieff, M.D., B.S., M.R.C.P., Lond. New York, G. P. Putnam's Sons. 1930. Pp. 580. Price, \$4.50.

This book can well boast of the fact that it is the only volume in existence that so comprehensively treats of all the disorders and diseases of childhood from the nursing standpoint, and of being, in addition, a general textbook on children's diseases.

To signal out one chapter in this book and give it praise would be to incur the guilt of partiality, because every branch of medicine dealt with in it has been thoroughly presented by men who are authorities in their specialties. Not to call particular attention to the chapter on general nursing, however, which describes in minutest detail the administration of drugs, the collection and observation of specimens, enemata, inhalations, hot and cold applications, baths, artificial feeding, gastric lavage, syringing of nose and ears, lumbar puncture, thoracic and abdominal paracentesis, etc., a knowledge of which every good nurse should possess, would be doing this magnificent volume a grave injustice. Recommended unqualifiedly to every nurse and welfare worker.

Physical Diagnosis. By Richard C. Cabot, M.D. New York: William Wood & Co. Pp. 529, with six plates and 279 figures in the text. Price, \$5.00 net.

For the past twenty-five years this well-known master-piece of Dr. Cabot has served the medical profession and particularly the medical student. The new tenth edition has brought up to date the sections on laboratory methods of diagnosis, and has enhanced the topics on coronary disease, electrocardiography, cancer of the lung, "cardiac Asthma," toxic hepatitis, and encephalitis lethargica. Its terseness, clarity, and compactness recommend this masterful work to every student and professor, general practitioner, and those engaged in routine examinations, as in industries, schools, etc.

Allergic Diseases, Their Diagnosis and Treatment. By Ray M. Balyeat, M.D. Philadelphia, F. A. Davis Co. Pp. 395. Price, \$5.00 net.

This book discusses asthma and hay-fever in very minute detail. Every possible source of allergy is clearly and thoroughly presented. It fully describes the method of determining the numerous causative factors and the procedure for desensitization. Treatment and its importance includes a consideration of the value of ephedrine and a caution against indiscriminate nasal surgery. The last three chapters deal with migraine, urticaria, and eczema and their allergic relationship. A unique work of its kind.

Report on Fifth International Congress of Military Medicine and Pharmacy, London, England. Edited by William Seaman Bainbridge, Commander, M.C.-F., U. S. Naval Reserve. Menasha, Wisc. George Banta Publishing Co. Pp. 154.

This small volume contains the ideas of men from forty nations on subjects of vital importance in military medicine. Needless to say, the benefits accruing to any nation from a report of such a congress are invaluable, and the author is to be commended for the compilation of such a complete account of the London meeting.

Diseases of Women. Edited by: Comyns Berkeley, M.A., M.D., M.C. (Cantab.), F.R.C.P., F.R.C.S., H. Russell Andrews, B.S., M.D., F.R.C.P., and J. S. Fairbairn, M.A., M.B., B.Ch., F.R.C.P., F.R.C.S. New York: William Wood & Co. Pp. 558. Price, \$6.00 net.

The fourth edition of this remarkable treatise on gynecological diseases is now ready for the student and physician interested in this field. This book has been conjointly prepared by "ten teachers" who are all competent gynecologists in England. It covers the anatomy and physiology of the genital organs in the first section very well. The other sections deal with diagnostic procedures, the symptoms of diseases of the genital organs, tumors of the uterus, ovary, and fallopian tubes, uterine displacements, infection of the generative system, ectopic pregnancy, urinary and intestinal disorders, and gynecological operations. Every subject is presented clearly, completely, and succinctly, and embodies the most recent advances made in this field. A very instructive book for every student, general practitioner, and gynecologist.

Diseases of the Eye. By Chas. H. May, M.D. New York, William Wood & Co. Pp. 461. Price, \$4.00 net.

The thirteenth edition of this book recommends itself to every student and physician. It contains 374 original illustrations, including 23 plates, with 73 colored figures, which further enable one to grasp the wealth of ophthalmological material so clearly presented by the author. The splendid chapters on ophthalmoscopy and diseases of the retina are particularly brought to the attention of the reader, because the reviewer feels that the ophthalmoscope is becoming more and more indispensable in the armamentarium of every practitioner as an aid to physical diagnosis. An invaluable work in the field of ophthalmology.

Physiological Principles in Treatment. By W. Langdon Brown, M.A., M.D. (Cantab.), F.R.C.P. New York, William Wood & Co. Pp. 464. Price, \$3.75 net.

The printing of the sixth edition is ample evidence of the popularity of this book. The latest advances in organotherapy, with a complete consideration of the recently discovered ovarian hormones, are presented in the first chapter. The other chapters deal with the rational treatment of gastric disorders, mechanical factors in digestion and indigestion, the work of the pancreas and liver (including the most modern ideas on liver therapy), lithiasis, albuminuria and the treatment of nephritis, diabetes, ketosis and acidemia, intestinal intoxications, irregular action of the heart, the vasomotor system in disease, cyanosis and dyspnea, problems of asthma, the rôle of calcium in the body, and vitamins. A complete work on physiological therapeutics.

The Scope and Aim of the Committee on the Cost of Medical Care

At the spring meeting of the Committee on the Cost of Medical Care in Washington May second and third, 1930, a special committee of private practitioners was appointed to consider the relation of the committee to the private practitioners of the country. This committee, composed of the undersigned members, now submits the following statement for the information of these practitioners on the scope and aim of the committee's work.

It was clearly recognized by all present at the spring meeting that the committee has undertaken a program of studies which in its scope goes far beyond that part of the cost of medical care which physicians provide. The expense of several other kinds of service now looms large in the total cost of many illnesses. In addition, special emphasis was given at the meeting to the question of the adequacy of the various services available in a community. Finally, the committee adopted a statement of three fundamental principles proposed by the Chairman, which should go a long way toward reassuring those who have been apprehensive regarding the nature of the committee's ultimate recommendations.

I.

The committee is interested in far more than the physician's bill, which, in many instances, is considerably less than half the total cost of illness. Hospital care, nursing, dentistry, laboratory examinations, and medicines often involve considerable expense, as is clearly shown by several of the committee's studies which are now being completed or have already been reported upon. In one middlewestern county recently surveyed, the expenditures for various kinds of medicines constituted over one-third of the total expense for medical care, and were 20 per cent greater than the costs of physician's services. It is also becoming apparent that a great deal of money is being spent for useless medicines and for various irregular forms of treatment which do the patient no good or which may result in positive harm.

In order to indicate clearly the broad scope of the committee's work, it was decided at the spring meeting to make a slight change in its name. The word "cost" is to be changed to "costs."

The complete name of the committee, with subtitle, will henceforth be "The Committee on the Costs of Medical Care—Organized to Study the Economic Aspects of the Prevention and the Care of Sickness, including the Adequacy, Availability and Compensation of the Persons and Agencies Concerned."

One vital problem before this committee, declared a prominent physician member, at the recent meeting, is the determination of what is reasonably adequate care. In many cases of obscure disorders and serious illness, expensive facilities are essential. Presumably, there must be available in the community well trained general practitioners, certain specialists, dentists, nurses, hospitals and health agencies—trained and well equipped to do their part in providing all the care that the individual may need. A plan of the executive committee, to conduct a study to determine standards of adequate medical care, under the general direction of some well known, competent physician and with the assistance of a committee of fifteen or twenty other physicians, was heartily endorsed at the meeting of the general committee.

The aim of the committee is to study the problem described by Dr. Olin West, the Secretary of the American Medical Association, as the one great outstanding problem before the medical profession today. This he says is that involved in "the delivery of adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life." The committee is endeavoring to establish a foundation of facts which have an important bearing upon this problem. On the basis of these facts, it will propose recommendations for the provision of adequate and efficient therapeutic and preventive service for all the people at a reasonable cost to the individual, which, at the same time, will provide physicians, dentists, nurses, hospitals and other agents assurance of adequate return. This is not a new statement of aim. Recent discussion, however, has given new emphasis to certain aspects of it. There are important items in the cost of sickness other than the physician's bill; and the adequacy of the service provided must be considered. The program of studies is a comprehensive one. It deals with questions of supply, demand, distribution and costs of all kinds of services, both preventive and curative; the relation of these costs to other expenses; the return accruing to the practitioners and various agents furnishing medical services; and especially will it seek to determine what standards of adequacy may reasonably be expected.

II.

Dr. Ray Lyman Wilbur, Chairman of the committee, proposed at the meeting May 2nd a statement of three fundamental principles for the consideration of the committee. This statement was referred to each of four subcommittees which held sessions during the two day meeting. The entire committee, at its last session, May 3rd, adopted with a few verbal changes the three principles. These will be of special interest to the physicians and dentists. They follow:

1. *The personal relation between physician and patient must be preserved in any effective system of medical service.*

Medical service is and doubtless, by its very nature, must remain a distinctly personal service. Even in this age of standardized commodities for the table, ready-to-wear clothing, and interchangeable spare parts for all types of machines, there has been no plan suggested for the reduction of medical diagnosis and treatment to basic units which can be ordered from traveling salesmen or acquired through correspondence courses. The physician must see his patient and see him, in many cases, over an extended period of time if the diagnosis and treatment are to achieve the greatest possible accuracy and efficiency. There is no substitute for personal observation.

Man is not a standardized machine and each individual reacts to the conditions of life in a manner in some respects unique. In the treatment of disease, this individual variation is a factor of great significance and can receive due consideration only when the practitioner has known the patient for a considerable time and maintains a personal relation with the patient.

2. *The concept of medical service of the community should include a systematic and intensive use of preventive measures in private practice and effective support of preventive measures in public health work.*

The cost of adequate curative treatment is now high and may continue to increase as expensive procedures resulting from scientific progress become more widely used. Sickness, in addition, involves other personal and social costs, some of which cannot be measured in monetary terms.

The outstanding achievements in scientific medicines have been made in the preventive rather than the curative field. Knowledge now available for the control of malaria, tuberculosis, smallpox, diphtheria, pellagra, typhoid fever, hookworm disease, and gonorrhea, if effectively applied, would make unnecessary a considerable proportion of the present expense for the cure of sickness.

3. *The medical service of a community should include the*

necessary facilities for adequate diagnosis and treatment.

From the standpoint of effective diagnosis, many diseases, such as tuberculosis, cannot be recognized promptly in their early stages without the aid of elaborate technical equipment. From the standpoint of adequate therapy, if the best of modern technique is not immediately available, complete cures are either delayed or rendered impossible of attainment. To cite a specific illustration of the improvement of modern therapeutic procedures over those of ten years ago, the time required for treatment of fractures of the hip, and the percentage of permanent invalidity resulting from that injury have each been reduced by more than half.

We cannot be content with anything except the best possible service that modern science can provide and it is therefore imperative that modern scientific equipment for the diagnosis and treatment of disease be available to the practitioners of medicine in every community.

Special Committee of Private Practitioners.

Stewart R. Roberts, M.D., <i>Chairman</i>	Kirby S. Howlett, M.D.
Walter P. Bowers, M.D.	Arthur C. Morgan, M.D.
A. C. Christie, M.D.	Herbert E. Phillips, D.D.S.
Haven Emerson, M.D.	C. E. Rudolph, D.D.S.
George E. Follansbee, M.D.	Richard M. Smith, M.D.
M. L. Harris, M.D.	N. B. Van Etten, M.D.
J. Shelton Horsley, M.D.	

Care of the Eyes in Childhood

With certain exceptions the diseases to which the eyes of children are liable are to a great extent avoidable. The exceptions are congenital defects, inherited constitutional diseases, and the ophthalmia of the new-born, the effects of which sometimes persist. Even the infective conjunctivitis which occasionally assumes epidemic form in schools could be in large measure prevented by insistence on a rigid hygiene in the matter of towels. Blepharitis is commonly conveyed to the follicles of the eyelid by dirty fingers. Phlyctenular disease, which seldom attacks well-to-do children, owes its origin to the absence of good and sufficient food. Even more important than such external conditions are those that directly affect the sight. These are mainly two, squint and myopia. Internal squint is still too frequent in children of school age, who, when tested, are found to be partially or completely amblyopic in the squinting eye. There has certainly been an improvement in this respect since the establishment of efficient medical inspection in public elementary schools, but the mischief is often done before the age of compulsory attendance, and among the well-to-do there are still many mothers who look upon a squint as a trivial complaint out of which the child will grow. They are unaware that, unless appropriate measures are taken, by the time the child has grown out of the squint he may also have grown out of the power of using his affected eye. During the only time in his life when it is possible for him to acquire the power of correctly interpreting the images which fall upon the retina it has been impossible for him to do so, and the unused eye has become more or less blind. With regard to myopia, there are cases in which, from hereditary or unknown causes children become highly myopic at a very early age, but these are comparatively rare, and the defect in vision is so obvious to the mother that they are not likely to remain untreated. Far commoner are cases where a child is born with a predisposition to myopia, or with an astigmatic defect which, from about the time he begins to learn to read, causes him to acquire the bad habit of excessive convergence in order to obtain clear images. The result is an abnormal lengthening of the anterior-posterior axis of the eyes which comes on insidiously. Sometimes mere stooping over lessons may induce this stretching of the eyeball, even without the excuse of astigmatism.

Mr. C. H. Bryant, who addressed the last meeting of the Brighton and Sussex Medico-Chirurgical Society on the common-sense care of eyes, suggested that the excessive looking at picture books by young children when in the nursery stage is a responsible factor in the production of myopia. This would, we think, only be the case with those infants who have a strong hereditary predisposition to myopia, and it would be a pity to debar normal children from what is, after all, a normal means of educating both eye and brain. The habit of stooping should certainly be checked. In any case, if a child's sight should appear to be weak the eyes should be examined under a mydriatic, when any tendency to myopia would be discovered and appropriate measures taken. From this point of view the establishment of nursery schools with medical inspection is highly desirable. Careful judgment is called for on the part of the doctor in deciding whether or not the constant wearing of glasses is to be insisted on. In the case of the myope, however slight the degree of error, it is probably wise to do so, as this is the most practical method of preventing its increase. That the glasses should be worn for near work is especially important, and this should be explained to the parent who will remark that as far as the

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